Ironbark Zinc Limited

Level 3
22 Railway Road
Subiaco 6008
Western Australia

PO Box 8187
Subiaco East
WA 6008
T: +61 8 6146 5325
www.ironbark.gl
admin@ironbark.gl

14 September 2020

Australian Securities Exchange Limited
Level 40, Central Park,
152-158 St Georges Terrace
PERTH WA 6000

MAIDEN ORE RESERVE DEFINED AT CITRONEN PROJECT

Ironbark Zinc Limited ("**Ironbark**", "**the Company**" or "**IBG**") is pleased to declare the maiden JORC 2012 compliant Ore Reserve for the underground deposit of its flagship Citronen Zinc-Led Project in Greenland.

Highlights

- JORC Ore Reserve: **21.3Mt @ 6.3% Zn equivalent containing 1.3Mt of Zn metal** and 0.1mt of Pb metal
- **Maiden Ore Reserve** underpins the first 6.5 years of the recently optimised Citronen mine plan
- Ironbark considers this maiden Ore Reserve to be a **critical step in its plans to reach FID in 2021** given it is typically a condition precedent to any project financing package.
- The Ore Reserve also **greatly increases the confidence level in the recently announced updated mine plan**, allowing IBG to begin discussions with new prospective Project and Offtake partners.

Ironbark Managing Director Michael Jardine commented:

"The declaration of the maiden Ore Reserve for the underground deposit at Citronen represents another significant milestone as the project moves towards an FID in 2021.

The combination of a much improved, and now Ore Reserve backed, mine plan, granted mining licence, completed Feasibility Study and the ongoing presence of Glencore and Trafigura as shareholders and off-takers clearly demonstrates the development ready status of the Project.

A rising zinc price environment, backed by a completely refreshed and reoptimized Feasibility Study to be completed in early 2021, will be the launching pad for Ironbark to make its long-anticipated transition from explorer to producer"

Figure 1 below shows a schematic of the recently updated Citronen Mine Plan (see Appendix C for further details of the results of this Study), inclusive of the planned underground development, overlaid with the future surface infrastructure.

Ore Reserve
The Citronen Ore Reserve was prepared by independent mining consultancy Mining Plus, in accordance with the JORC Code 2012.

The Ore Reserve estimate for Citronen is summarised below in Table 1:

Table 1 – Ore Reserves

Category	Tonnes (Mt)	ZnEq Grade (%)	Zn Grade (%)	Pb Grade (%)	ZnEq Metal (Mt)	Zn Metal (Mt)	Pb Metal (Mt)
Proved	7.8	6.3	5.9	0.6	0.5	0.5	0.04
Probable	13.5	6.3	6.0	0.4	0.8	0.8	0.06
Total P&P	**21.3**	**6.3**	**6.0**	**0.5**	**1.3**	**1.3**	**0.1**

The Ore Reserve is based on Measured and Indicated Resources only and does not include any Inferred Mineral Resources. For full details of the assumptions behind the Ore Reserve, including JORC Table 4, please see Appendix A.

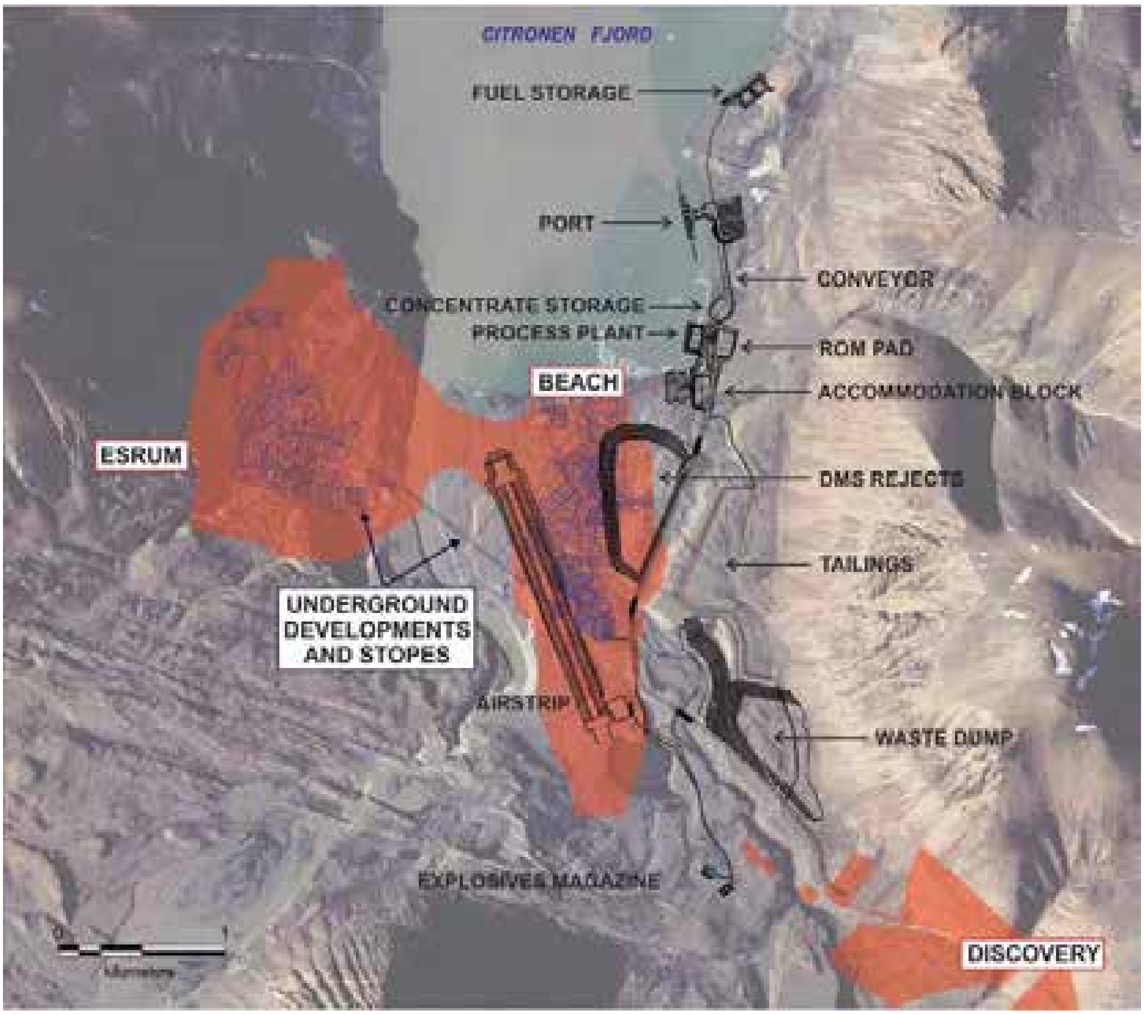
The Mineral Resources for the Citronen Project, on which these Ore Reserves are based, are summarised below in Table 2:

Table 2 – Mineral Resources (see Appendix B for JORC Tables 1-3)

Category	Mt	Zn%	Pb%	Zn+Pb%
Measured	25.0	5.0	0.5	5.5
Indicated	26.5	5.5	0.5	6.0
Inferred	19.3	4.9	0.4	5.4
Total	**70.8**	**5.1**	**0.5**	**5.7**

For full details of the assumptions behind the Mineral Resources, please see Appendix B.

Figure 1: Plan view of the proposed Citronen Mine showing updated underground mine design within the global Resource (in red), and planned surface infrastructure.

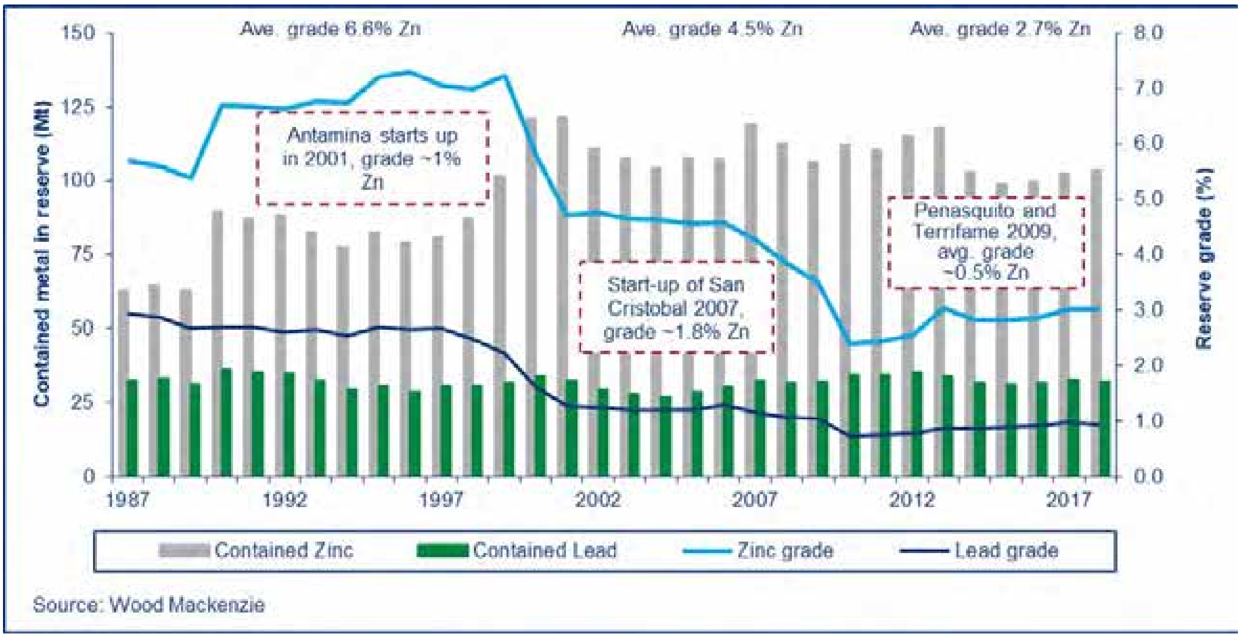


For clarity, and further to the announcement made by the Company on Monday 7th September 2020, the Zn price of USD1.20/lb (as outlined on p.4 of the Mining Plus Reserve report) was selected by the Board of Ironbark as a conservative view of the Zinc price relative to previous studies (which were optimised at USD 1.38/lb). The Company notes this is also below the long term average Zinc price forecast by Wood Mackenzie of USD1.39/lb (p.8 "Global Zinc and Lead Cost Summary", June 2020) and the figure of USD1.38/lb used in 2017.

Given this conservative view of the Zn price used in the optimisation study results released on 7th September 2020 and this maiden Ore Reserve estimation, the Ironbark Board elected to only run upside sensitivity analysis to demonstrate the potential for mine life expansion in a higher Zn price environment.

Citronen in the Marketplace

The 6.3% Zn equivalent Ore Reserve grade at Citronen is favourably positioned given the long-term trend in declining Zn head grades globally ("Average Reserve Grade", Wood Mackenzie Global Zinc & Lead Mine Cost Summary June 2020):



Relative to Citronen's development "Project" peers, as defined by Wood Mackenzie (p.4, p.17 Global Zinc & Lead Cost Summary June 2020), Citronen is forecast to be significantly larger, and operate at a higher grade:

	Citronen	"Project" Peers
LOM average Zn Production	120kt (Wood Mac estimate only)	69kt
LOM Zn equiv grade	6.3% (Reserve grade)	5.5%

In terms of location, Greenland presents as an eminently safe investment jurisdiction amongst its suite of "Base Case & Probable Project" Project peers, with Citronen also rating favourably on forecast capital intensity (Zn Metal / Capex):

Base case and probable projects

Source: Wood Mackenzie

Competent Persons Statement

The information included in this report that relates to Exploration Results & Mineral Resources is based on information compiled by Ms Elizabeth Laursen (B. ESc Hons (Geol), GradDip App. Fin., MSEG, MAIG), an employee of Ironbark Zinc Limited. Ms Laursen has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Ms Laursen consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The mining-specific information in this report, which relates to Ore Reserves, is based on information compiled by Mr Andrew Gasmier CP (Mining), who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Gasmier is employed full time by Mining Plus. He has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Gasmier consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Competent Persons Disclosure

Ms Laursen is an employee of Ironbark Zinc Limited and currently holds securities in the company.

Appendix A: Citronen Underground JORC Ore Reserve Estimate

MINING PLUS

+61 8 9213 2600
info@mining-plus.com
www.mining-plus.com

Memorandum

To: Michael Jardine (Managing director, Ironbark)

Cc: Ricardo Rosendo (Project Manager, Mining Plus)

From: Andrew Gasmier MAusIMM CP, (Principal Consultant - Underground, Mining Plus)

Date: 11 September 2020

Subject: Brief Report on JORC Ore Reserve Estimate – Ironbark Zinc Limited (Ironbark) Citronen Underground Study

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Mining Plus has undertaken an underground mine design, schedule, and cost model to pre-feasibility level to the Citronen Deposit. The study has resulted in an Ore Reserve, as outlined in Table 1.

Citronen Underground Ore Reserve Statement – 24 January 2020

There is a portion of the Citronen material that is included in the Life of Mine design, but is not part of the mineable reserves (Table 1), as it is not currently classified as Measured or indicated mineral resource. The material represents 26% of the overall Life of Mine material and was removed from the economics of the project.

As at 17 August 2020, the Ore Reserve for the Citronen Underground Mine is as shown in Table 1, and is in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore reserves (the JORC Code) 2012 edition. The estimated reserve stated is inclusive of Measured and Indicated Mineral Resources.

Table 1 – Ore Reserve Estimate for Citronen

Category	Tonnes (Mt)	ZnEq Grade (%)	Zn Grade (%)	Pb Grade (%)	ZnEq Metal (Mt)	Zn Metal (Mt)	Pb Metal (Mt)
Measured	7.8	6.3	5.9	0.6	0.5	0.5	0.04
Indicated	13.5	6.3	6.0	0.4	0.8	0.8	0.06
Total Measured and Indicated	**21**	**6.3**	**6.0**	**0.5**	**1.3**	**1.3**	**0.1**

Table 2 – Additional Life of Mine Inventory for Citronen

Category	Tonnes (Mt)	ZnEq Grade (%)	Zn Grade (%)	Pb Grade (%)	ZnEq Metal (Mt)	Zn Metal (Mt)	Pb Metal (Mt)
Inferred	7.3	5.4	5.0	0.4	0.4	0.4	0.0
Unclassified	-	-	-	-	-	-	-

Table 3: Material by Resource Category – Citronen

Category	Tonnes (Mt)	ZnEq Grade (%)	Zn Grade (%)	Pb Grade (%)	ZnEq Metal (Moz)	Zn Metal (Mt)	Pb Metal (Moz)
Proved	7.8	6.3	5.9	0.6	0.5	0.5	0.04
Probable	13.5	6.3	6.0	0.4	0.8	0.8	0.06
Total Proved and Probable	**21**	**6.3**	**6.0**	**0.5**	**1.3**	**1.3**	**0.1**

In Table 1 , Table 2 and Table 3:

All figures have been rounded to appropriate significant figures.

- Rounding errors may occur as a result of rounding.
- Measured Mineral Resource has been converted to Probable Ore Reserves due to the status of study conducted.

The additional life of mine inventory presented in Table 2 above is classified as inferred material and is additional to the Ore Reserve. This material is of insufficient confidence to form part the Ore Reserve and may not form the basis for future reserves. The material has been included in the project life of mine evaluations.

The mining-specific information in this report, which relates to Ore Reserves, is based on information compiled by Mr Andrew Gasmier CP (Mining), who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Gasmier is employed full time by Mining Plus. He has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Gasmier consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Modifying Factors

The modifying factors used in this study and subsequently for the Ore Reserve are in Table 5 – JORC 2012 Table 1 – Section 4 Estimation and Reporting of Ore Reserves.

Mineral Resource

The Mineral Resources used as the basis of this Ore Reserve were completed by others and reviewed by Mining Plus in 2012. The resource is separated into three different block models with the names stated below:

- 2011_nov_beach.bmf
- 2011_nov_dis.bmf

- 2011_nov_esm.bmf

Ravensgate completed the models in 2011, and no further updates to the Mineral Resource have been undertaken since this work.

Site Visit

No site visit was conducted by mining plus.

Study Status

A Mining study to pre-feasibility level has been completed that supports this Ore Reserve and includes a mine plan that is technically achievable and EBITDA positive.

Cut-Off Parameters

Cut-off grade is based on a Net Smelter Return (NSR), taking into account the net revenue from recovered Zn, Pb and the cost of mining, processing and G&A.

The Citronen project is a multi-material and recovery project. Thus it is not possible to set the Cut-off value based on the contained metal. To overcome this limitation, an NSR value calculation was undertaken, taking into consideration the recoveries and smelter terms for Zn and Pb. With the NSR value, a ZnEq grade was back-calculated and resulted in the approximate value of 5.3% ZnEq.

The formula for the ZnEq calculation is as stated below:

$$ZnEq = Zn + 0.68 \times P$$

Upon completion of the cost model, a new cut-off calculation was undertaken, using the same cost assumptions but increasing the metal price by 25% (1.5US$/lb). The cut-off calculated was on the mark of 4.0% Zn equivalent and increases the ore tonnes by 48%.

An extension of the design was carried out to test scenarios at different sets of metal price, and it showed that the 4.0% ZnEq cut-off scenario was still economical under the metal price used in the study (1.2 US$/lb). The exercise showed that the initial process and G&A costs were conservative. Ironbark will conduct investigations in the near future to increase the confidence in processes and G&A costs.

Mining Factors or Assumptions

Overbreak was considered to be the only source of dilution in the mine. The panel layout was undertaken with the addition of 30cm and 10cm of overbreak to the backs and the floor, respectively. , which equates to approximately 7% dilution based on an average width of 6 metres.

The mining recovery was considered to be 98% as Cut and Fill is a high recovery low dilution mining method. Regional pillars are extracted at the end of the mine life with a recovery factor of 50%. Access pillars were also assessed and factorized as 7% on top of the mine recovery.

All mining parameters are based on geotechnical recommendations.

Metallurgical factors or assumptions

The metallurgical factors and assumptions were sourced from the 2017 Citronen Feasibility study.

- Zn recovery of 85.3%
- Pb recovery of 69.7%

Permits

It is understood by Mining Plus that the Citronen Fjord Property is comprised of one exploration licence, listed in Table 4.

Table 4: Citronen Fjord Tenements

Licence	Name	Area km2	Granted Date
2016/30	Tasarneq	120	December 16, 2016

Infrastructure

The deposit is located in the Northeast of Greenland, it is accessible by air or ship. No infrastructure exists at the Project site, other than a temporary camp and a gravel airstrip. All required infrastructure will have to be established.

Project Capital

Mining capital estimates have been made using, wherever possible, prices obtained by quotations undertaken for the 2017 Citronen Feasibility study, or the Mining Plus knowledge base by benchmarking of similar operations.

Operating Costs

All mining operating costs have been built up from first principles based on inputs from Ironbark or from estimates sourced from suppliers.

Revenue Factors

Max payable Zn is 85% and max payable Pb is 95% in concentrate.

Commodity prices as per discussions with Ironbark are detailed below:

- Zinc price of US$ 1.20/lb
- Lead price of US$ 0.95/lb

Market Assessment

The Zinc market is mature and highly liquid, with the metal freely traded on several exchanges, including the LME.

A rising price trend seen over the last ~6 months is indicative of a tightening supply-demand dynamic with several short to medium term catalysts likely to provide further support. These include supply constraints at some operating Zinc mines, combined with an expected upswing in demand due to broad based stimulus measures being implemented by a number of macroeconomic actors globally.

It is anticipated that the Zinc price will move moderately higher in the coming years as demand continues to exceed available supply. This is based on an analysis of a range of freely available 3rd party market forecasts.

Economic Factors

The project, given the above factors, returns a positive EBITDA of US$ 244.6M as estimated by the financial model built under assumptions provided by Ironbark.

The Project is most sensitive to the following in order of impacts:

- Zn Grade, Price & Metal Recovery
- Upfront capital

Environmental

A full Environmental Impact Assessment has been completed and submitted to the Government of Greenland. Environmental factors and management solutions are outlined in the Feasibility Study Report for Citronen released to the ASX on 29 April 2013. Tailings from the mine will be used as backfill underground or stored in an on-ground Tailings Storage Facility. Waste rock will be stored in a waste-dump on surface. Environmental studies concluded that mine wastes will not significantly increase the levels of metals in the aquatic or terrestrial environment of the area.

Social

Relationships with stakeholders are in good standing and there are no known social impediments to the project. A full Social Impact Assessment has been submitted to, and accepted by, the Government of Greenland.

Other

There are risks associated with assumptions made in the current study. Further analysis is recommended around the following items:

- Mining on the Permafrost Zone

- Hydrogeological study
- Frozen Backfill
- Geotechnical Numeric Modelling
- Production rate
- Process Plant and Surface Infrastructure
- Discovery Open Pit study update

Mining on the permafrost Zone

The following up to date data should be gathered before mining commencement.

- Daily and mean monthly air temperatures.
- The amplitude of ground temperature variation in the active layer (layer of rock or soil above the permafrost zone).
- Stable permafrost temperature distribution at depth.
- Snow cover and precipitation measurements.

hydrogeological study

In regions of continuous permafrost the frost table location can have a large impact on the water regime. Intact permafrost is an impenetrable water boundary.

The Citronen site is in an area of continuous permafrost where the ground stays frozen all year to an ultimate depth of 400m, as projected by literature using measured geothermal gradient.

Citronen is considered to be a dry mine based on the above mentioned and experience from drilling on site. However, an underground hydrogeological study to pre-feasibility level needs to be undertaken to assess the potential (if existing) sources of underground water inflow and risks associated with it.

Frozen backfill

The understanding of the properties and behaviours of the frozen backfill is fundamental for a successful application of the studied mining method.

Further tests should be conducted around the processing plant slurry for a better understanding of its behaviour when frozen and exposed to heat. This will be the environment that the frozen backfill will be subjected to in studied mining method.

Production rate

Mining Plus recommends a production rate optimization investigation in light of the potential reserves outlined in the study. A lower production rate could reduce costs and improve the financials of the project.

Geotechnical Numeric Modelling

A geotechnical analysis and modelling should be undertaken in the next phases of the study around pillar sizes and ground support. The recommended work to be carried out is outlined below:

- **Re-log Core data** - Logging of RQD at least for 20m into the HW of each ore intersection.
- **Underground stress analysis using 3DEC (Hangingwall)** – the stress analysis will produce information about deformations around the seams hanging wall. The model will generate reliable information that will backup a 3d stress analysis.
- **3D stress strain analysis (Map3D modelling)** – the 3D stress-strain analysis will test ground support, pillar sizes, spans, regional pillars, subsidence of the frozen sedimentary rock when exposed.

Processing plant and surface infrastructure.

A review of the processing plant and surface infrastructure (capital and sustaining) costs needs to be carried out for more accuracy of the financial model. Ironbark indicates that work will be undertaken on the course of the near future.

Discovery Open Pit study update

The addition of the Discovery Open Pit to the financial model increases the EBITDA of the project by 26%. It is recommended that am Open Pit study update be undertaken for a higher confidence on the project financials.

Audits or reviews

An external audit has not been conducted. However, Mining Plus has undertaken an internal peer review on the study and Ore Reserve Statement.

Discussion of relative accuracy/ confidence

Mining Plus has ranked the accuracy of key cost items in the mining cost model and produced a weighted average accuracy for the study cost estimate. The portion of costs estimated as part of the Citronen optimization Study has an accuracy of ±25%.

Table 5 – JORC 2012 Table 1 – Section 4 Estimation and Reporting of Ore Reserves

<table>
<tr><th>Criteria</th><th>Explanation</th><th>Summary Comments for JORC Table 1</th></tr>
<tr>
<td>Mineral Resource Estimate For Conversion To Ore Reserves</td>
<td>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve</td>
<td>The Mineral Resources used as the basis of this Ore Reserve were completed by others and reviewed by Mining Plus prior to commencing the optimization study. The resource is separated in 3 different block models with the names stated below:
2011_nov_beach.bmf
2011_nov_dis.bmf
2011_nov_esm.bmf
The Resource estimate was sourced from the 2017 Feasibility study and is shown in the picture below:
70.8 million tonnes at 5.7% Zn + Pb
<table>
<tr><th>Category</th><th>Mt</th><th>Zn%</th><th>Pb%</th><th>Zn+Pb%</th></tr>
<tr><td>Measured</td><td>25.0</td><td>5.0</td><td>0.5</td><td>5.5</td></tr>
<tr><td>Indicated</td><td>26.5</td><td>5.5</td><td>0.5</td><td>6.0</td></tr>
<tr><td>Inferred</td><td>19.3</td><td>4.9</td><td>0.4</td><td>5.3</td></tr>
</table>
Using Ordinary Kriging interpolation and reported at a 3.5% Zn cut-off
Including a higher grade resource of:
29.9 million tonnes at 7.1% Zn + Pb
<table>
<tr><th>Category</th><th>Mt</th><th>Zn%</th><th>Pb%</th><th>Zn+Pb%</th></tr>
<tr><td>Measured</td><td>8.9</td><td>6.6</td><td>0.6</td><td>7.2</td></tr>
<tr><td>Indicated</td><td>13.7</td><td>6.8</td><td>0.5</td><td>7.3</td></tr>
<tr><td>Inferred</td><td>7.3</td><td>6.2</td><td>0.5</td><td>6.6</td></tr>
</table>
Using Ordinary Kriging interpolation and reported at a 5.0% Zn cut-off
</td>
</tr>
</table>

Criteria	Explanation	Summary Comments for JORC Table 1
	Clear statements as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves	The Mineral Resources are reported inclusive of the Ore Reserves.
Site Visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits	• One of the Ravensgate Resource Report 2012 authors was involved in the drilling and project development at an early stage and visited the site. The author was integral in the establishment of industry best QA/QC practices and has an intimate knowledge of all procedures used on site. • The author of the Wardrop 2007 Resource Estimate Report was involved in the planning and execution of the 1990's drilling. • The author of the Ironbark 2008 in-house Resource Estimate was involved in the planning and execution of the 2007 sampling and 2008 drilling programs. • The Competent Person has not undertaken a site visit
	If no site visits have been undertaken indicate why this is the case	• The project is currently in Pre-feasibility stage and there are no facilities or establishments on site • COVID-19 international travel restrictions prevent a site visit from being undertaken at this stage

<table>
<tr><th>Criteria</th><th>Explanation</th><th>Summary Comments for JORC Table 1</th></tr>
<tr><td rowspan="2">Study Status</td><td>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves</td><td>A mining study to pre-feasibility level has been completed that supports this Ore Reserve.</td></tr>
<tr><td>The code requires that a study to at least Pre-feasibility Study level has been undertaken to convert Mineral Resource to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material modifying factors have been considered</td><td>(2020) As part of the 2020 Citronen Mine Study, a mine plan was developed that was technically achievable and EBITDA positive. This mine plan considered material modifying factors such as mining, processing, and Metallurgy.
(2020) Turner Mining and Geotechnical Pty Ltd (TMG) undertook a geotechnical review of the 2011 Wardrop study. TMG reassessed local and regional pillar sizes, ground support and outlined further work to be undertaken by Ironbark for a higher confidence on the deposit geotechnical parameters.
(2017) An update of the 2011 Wardrop Feasibility Study was carried out by Ironbark in 2017
(2011) A Feasibility study conducted by Wardrop in 2011 deemed the project technically and economically viable.</td></tr>
<tr><td>Cut-Off Parameters</td><td>The basis of the cut-off grade(s) or quality parameters applied</td><td>Cut-off grade is based on a Net Smelter Return (NSR), taking into account the net revenue from recovered Zn, Pb and the cost of mining, processing and G&A. The NSR calculation relied upon the processing recoveries shown below:
Zn Recovery : 85%
Pb Recovery: 69.7%
Costs:
<table><tr><th>Item</th><th>Cost (USD$)</th></tr><tr><td>Processing Costs</td><td>30.68/tonne ore</td></tr><tr><td>G&A Costs</td><td>12.64/tonne of ore</td></tr></table></td></tr>
</table>

Criteria	Explanation	Summary Comments for JORC Table 1
		Mining Costs 36.65/tonnes of ore The Citronen project is a multi-material and recovery project. Thus, it is not possible to set the Cut-off value based on the contained metal. To overcome this limitation, an NSR value calculation was undertaken, taking into consideration the recoveries and smelter terms for Zn and Pb. With the NSR value, a ZnEq grade was back-calculated and resulted in the approximate value of 5.3% ZnEq. The formula for the ZnEq calculation is as stated below: $ZnEq = Zn + 0.68 \times Pb$ Upon completion of the cost model, a new cut-off calculation was undertaken, using the same cost assumptions but increasing the metal price by 25% (1.5US$/lb). The cut-off calculated was on the mark of 4.0% Zn equivalent and increased the ore tonnes by 48%. An extension of the design was carried out to test scenarios at different sets of metal price, and it showed that the 4.0% ZnEq cut-off scenario was still economical under the metal price used in the study (1.2 US$/lb). The exercise showed that the initial process and G&A costs were conservative. Ironbark will conduct investigations in the near future to increase the confidence in processes and G&A costs.
Mining Factors Or Assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design)	• The Ore Reserve Estimate is based on the Mineral Resource released in 2011, by Ravensgate, with the competent person being Ravengate's Stephen Hyland. • The mining method is cut and fill with primary and secondary panels. • Overbreak was considered to be the only source of dilution in the mine. The panel layout was undertaken with the addition of 30cm and 10cm of overbreak to the backs and the floor, respectively, which equates to approximately 7% dilution based on an average width of 6 metres. • The mine recovery was considered to be 98% as Cut and Fill is a high recovery low dilution mining method. Regional pillars are considered to be partially extracted at the end of the mine life with a recovery factor of 50%. Access pillars were also assessed and factorized as 7% on top of the mine recovery. • All mining parameters are based on geotechnical recommendations. • Zn and Pb recoveries of respectively 85% and 69.7%.

Criteria	Explanation	Summary Comments for JORC Table 1
	The choice, nature and appropriateness of the selected mining method (s) and other mining parameters including associated design issues such as pre-strip, access, etc.	• The current mining method (cut and fill) is an optimization of the previously selected method (room and pillar). Furthermore, it takes into consideration the current geotechnical parameters and mining practicalities. • The key driver of the mining method selection was to maximise the recovery under the geotechnical assumption that all panels need to have the top (backs) supported. The presumption excludes options for longhole drilling methods, as the height of the production areas is relatively small (average of 6m), which excludes the possibility of developing a bottom drive for a panel. • The mining method was optimised to follow the contours of the orebody mineralization increasing recovery and reducing dilution. The new design will also help with mining productivity, as it reduces development issues and makes the backfill process easier.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling	Geotechnical parameters and advice were supplied by the TMG's review: • Recommended drive dimensions • Local pillar sizes • Regional pillar sizes • Mining method • Panel sequence • Recommended ground support standards • Risk of surface subsidence in shallow mine areas The information was used to generate the mine design.
	The major assumptions made and the Mineral Resource model used for pit and stope optimisation (if appropriate)	Not Applicable

<table>
<tr><th>Criteria</th><th>Explanation</th><th>Summary Comments for JORC Table 1</th></tr>
<tr><td rowspan="5"></td><td>The mining dilution factors used</td><td rowspan="4">Overbreak was considered to be the only source of dilution in the mine. The panel layout was undertaken with the addition of 30cm and 10cm of overbreak to the backs and the floor, respectively, which equates to approximately 7% dilution based on an average width of 6 metres
The mine recovery was considered to be 98% as Cut and Fill is a high recovery low dilution mining method. Regional pillars are considered to be partially extracted at the end of the mine life with a recovery factor of 50%. Access pillars were also assessed and factorized as 7% on top of the mine recovery.
Mineable areas were outlined with the use of the Datamine MSO software.
The minimum mining width used was 4.0 meters, this parameter derived from the 2012 Citronen Mining Optimisation design and Schedule study undertaken by mining plus.
There is a portion of the Citronen material that is included in the Life of Mine design but is not part of the mineable reserves, as it is not currently classified as Measured or indicated mineral resource. The material represents 26% of the overall Life of Mine material and was removed from the economics of the project. The project is highly sensitive to variations in recovered zinc metal.</td></tr>
<tr><td>The mining recovery factors used</td></tr>
<tr><td>Any mining widths used</td></tr>
<tr><td>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion</td></tr>
<tr><td>The infrastructure requirements of the selected mining methods</td><td>Sufficient infrastructure will be established by the mining contractor for the mine to operate, including, but not limited to, surface access roads, waste storage facilities, surface explosive magazine, declines, ventilation fans and return airways, sumps and pump stations.</td></tr>
</table>

Criteria	Explanation	Summary Comments for JORC Table 1
Metallurgical Factors Or Assumptions	The metallurgical process proposed and the appropriateness of that process to the style of the mineralisation	Ore processing will incorporate the following stages: primary & secondary crushing, dense media separation, grinding and classification, flotation and concentrate thickening and filtration. The process method chosen is considered standard for the commodity and style of mineralisation. Very high zinc flotation recoveries of 85% have been achieved in test work. Further information on metallurgical and process test work can be found in the Ironbark Feasibility Report released 29 April 2013.
	Whether the metallurgical process is well-tested technology or novel in nature	The metallurgical process is well-tested in the industry.

Criteria	Explanation	Summary Comments for JORC Table 1
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied	Samples were prepared for mineralogical testwork in ALS Ammtec and then sent for Qualitative Optical Mineralogical Examination via Roger Townend and Associates. For the test programme, ALS Ammtec was supplied with three spiral separation testwork tail samples from the Ironbark Citronen Project in Greenland: • Sample # 1: Spiral Cut 6 Product: 3285 • Sample # 2: Spiral Cut 7 Product: 3286 • Sample # 3: Spiral Cut 8 Product: 3287 Final results can be seen in the mineralogical exam result table below:

Material	Sample ID		
	Spiral Cut 6 Product: 3285	Spiral Cut 7 Product: 3286	Spiral Cut 8 Product: 3287
Ores	Minor	Minor	Minor
Pyrite	Dominant	Dominant	Dominant
Sphalerite	Major	Minor	Minor
Galena	Accessory	Trace	Trace
Marcasite	Accessory	Trace	-
Hematite	-	-	Trace
Gangue	Dominant	Dominant	Dominant
Ankerite	Major	Major	Major
Quartz	Major	Minor	Minor
Calcite	Minor	Major	Major
Mica	Accessory	Minor	Minor

Criteria	Explanation	Summary Comments for JORC Table 1
	Any assumptions or allowances made for deleterious elements	No deleterious elements have been identified through the sampling and assaying of the mineralisation.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole	Metallurgical testing has been carried out on Citronen drill core after the 2008, 2009, 2010 and 2011 drilling campaigns. Composite samples were created for each of the three deposits – Beach, Esrum and Discovery. The test work has been conducted by Burnie Laboratories in Tasmania (now part of ALS Global).
	For minerals that are defined by the specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not Applicable
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options	A full Environmental Impact Assessment has been completed and submitted to the Government of Greenland. Environmental factors and management solutions are outlined in the Feasibility Study Report for Citronen released to the ASX on 29 April 2013. Tailings from the mine will be used as backfill underground or stored in an on-ground Tailings Storage Facility. Waste rock will be stored in a waste-dump on surface. Environmental studies concluded that mine wastes will not significantly increase the levels of metals in the aquatic or terrestrial environment of the area.

Criteria	Explanation	Summary Comments for JORC Table 1
	considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	• The Citronen Fjord Zinc Project is located in north-eastern Greenland approximately 2,100 km north of the capital of Greenland, Nuuk. It is located at 83°05’N, 28°16’W. • There is no existing infrastructure at the site and consequently all infrastructure and ancillary facilities need to be developed as part of the project. The facilities and infrastructure to be developed are based on the original 2010 studies.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study	Capital costs were derived on the following basis: • The overall plant layout and equipment sizing estimation sourced from the 2017 Citronen Feasibility Study Update. • The cost model was set up to have a mining contractor develop the declines, level accesses and ore drives and extract the ore. The mining contractor costs for equipment provision and maintenance, labour provision and mobilization/demobilisation are based on the current experience of Mining Plus (MP) with similar sized and located projects. • Mining capital estimates have been made using, wherever possible, pricing obtained from the Citronen 2017 study or the Mining Plus knowledge base by benchmarking of similar cut and fill/ room and pillar operations. • Mining capital costs include: ○ Mine establishment activities

Criteria	Explanation	Summary Comments for JORC Table 1
		○ Primary ventilation fans ○ fixed plant ○ Mine air compressor ○ High voltage electrical distribution network ○ Water tanks for mine water supply ○ Radio Communication system ○ Pumping system ○ Survey equipment ○ Mine rescue equipment • Contingency has been applied to account for the accuracy of the estimate.
	The methodology used to estimate operating costs	• The contractors' development equipment includes jumbos, loaders, charge-up units, ITs and a service truck. The operating hours of the development equipment have been determined from first principles based on mobile equipment productivity rates provided by MP (based on experience with similar-sized projects); • Personnel requirements were sourced in three ways: ○ Principal management and technical staff positions numbers were sourced from the 2017 Citronen FS update. ○ Services positions were based on MPs experience and the requirements calculated to achieve the mine plan. ○ Operations personnel were linked to equipment requirements and determined from the equipment schedule. • The consumables costs were calculated from first principles and the quantities determined using the physicals schedule, mine profiles and input assumptions. The unit costs were sourced from the input assumptions worksheet. A freight cost of 3% was applied to the consumable costs. • Service costs calculated for ventilation and pumping services based on BCM project database. The secondary ventilation and mobile pumping were assumed to be provided by the mining contractor. A monthly ownership cost was calculated from first principles and was applied in the Auxiliary Equipment worksheet in the cost model • The mobilisation cost assumptions were based on MPs experience with similar projects • Contractor mark-up has been applied to contractor personnel, equipment, consumables and mobilisation and demobilisation costs. Contractor mark-up is applied at 10% with a further corporate mark-up of 3%. These rates are based on MPs experience with similar projects and Australian rates. • An allowance was made within the cost model for the following miscellaneous works; ○ Raise boring

Criteria	Explanation	Summary Comments for JORC Table 1
		○ Box cut excavation ○ Surface trucking ○ Shaft sinking • General and administration costs sourced from the 2017 Citronen Feasibility Study Update • Processing plant operating costs sourced from the 2017 Citronen Feasibility Study Update • Open pit operating costs sourced from the 2017 Citronen Feasibility Study Update
	Allowances made for the content of deleterious elements	No Allowances were made for deleterious elements
	The source of exchange rates used in the study	The cost model provides a first-principles estimate, in USD.
	Derivation of transport charges	Two solutions were considered for the transport of concentrate from Citronen Fjord: An icebreaking tug with barge versus two ice-class bulk carriers. The solution with the ice-class bulk carriers was chosen due to the greater load capacity, resulting in fewer required trips per year, ease of operation and greater economic benefit. Shipping to and from Citronen will utilise two high ice class mine re-supply vessels. • One Polar Class 3 (PC3), 65,000 Deadweight Cargo Capacity (DWCC) vessel designed to carry zinc and lead concentrates, arctic diesel and TEUs (Class & Non Class) without ice breaker escort. • One Polar Class 4 (PC4), 55,000 DWCC vessel designed to carry zinc and lead concentrates, arctic diesel and TEUs (Class & Non Class) without ice breaker escort. Concentrate production will be approximately 300,000 tonnes per annum (peaking at 320,000). Based on the selected ships capacity, this corresponds to a requirement for approximately 3 return trips per year.

Criteria	Explanation	Summary Comments for JORC Table 1
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Not Applicable
	The allowances made for royalties payable, both Government and private	The Citronen Fjord Deposit is located wholly within Exploitation Licence 2016/30 which is held in the name of Ironbark A/S a wholly owned subsidiary of Ironbark Zinc Limited. EL2016/30 lies within the Northeast Greenland National Park. A 2.5% royalty is payable to vendors.
Revenue Factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns etc.	• Zn price - US$ 1.20/lb • Pb price - US$ 0.95/lb • Smelting losses ○ 0.25% • Maximum payable prices: ○ Zn – 85% ○ Pc – 95% • Head grade is determined as a result of initial strategic planning in Mine shape optimisation (MSO) and then further detailed mine scheduling using Enhanced Production Scheduler (EPS) with mine physical data then provided to calculate revenue, etc. in models.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	• Metal Prices derived from long term averages • Currency exchange rates • Royalties

Criteria	Explanation	Summary Comments for JORC Table 1
Market Assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	The Zinc market is mature and highly liquid, with the metal freely traded on several exchanges, including the LME. A rising price trend seen over the last ~6 months is indicative of a tightening supply-demand dynamic with several short to medium term catalysts likely to provide further support. These include supply constraints at some operating Zinc mines, combined with an expected upswing in demand due to broad based stimulus measures being implemented by a number of macroeconomic actors globally.
	A customer and competitor analysis along with the identification of likely market windows for the product	The Citronen Project has pre-committed 70% of its metal production on binding take or pay agreements with the two largest base metal trading groups in the world, Glencore and Trafigura. It is anticipated that the balance of production (30%) will also be pre-sold prior to the commencement of mining.
	Price and volume forecasts and the basis for these forecasts	It is anticipated that the Zinc price will move moderately higher in the coming years as demand continues to exceed available supply. This is based on an analysis of a range of freely available 3rd party market forecasts.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract	Not Applicable

Criteria	Explanation	Summary Comments for JORC Table 1

Economic	The inputs to the economic analysis to produce the net present value (NPV), the source and confidence of these economic inputs estimated inflation, discount rate, etc.	The Financial model combined inputs from the 2017 and the cost model generated on the 2020 Citronen Underground Mining Study. The portion of costs estimated as part of the Citronen optimization Study have an accuracy of ±25%.
		A summary of the costs is stated below:
		Capital Costs:
		• Mining US$ 75.5M
		• Process and infrastructure
		    o Surface Capital Infrastructure US$ 411M
		    o Surface Sustaining Capital US$ 38.4M
		Operating costs:
		• Underground Mining US$ 37.0/t of ore
		• Open Pit Mining US$ 7.0/t of ore
		• Processing US$ 16.0/t of ore
		• G&A US$ 7.0/t of ore
		The financial model is based on the following key criteria:
		• Discount rate of 8%
		• No allowance for inflation
		The Open Pit costs, tonnes and grade were sourced from the 2017 Citronen Feasibility Study Update and plugged in the financial model. There was no open pit analysis undertaken in the 2020 Citronen Underground Study.

	NPV ranges and sensitivity to variations in the significant assumptions and inputs	A sensitivity analyses was conducted within the financial model to identify the impact of the metal price on the forecasted project returns. The analysis showed that the project is very sensitive to metal price variations. The project also showed to be highly sensitive to the addition of the Discovery open pit to the end of the mine life.

Criteria	Explanation	Summary Comments for JORC Table 1
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Relationships with stakeholders are in good standing and there are no known social impediments to the project. A full Social Impact Assessment has been submitted to, and accepted by, the Government of Greenland.

Other	To the extent relevant, the impacts of the following on the project and/or on the estimation and classification of the Ore reserves:	Mining Plus identified risks associated with assumptions made in the current study and recommends further analysis around the following items:
		• Mining on the Permafrost Zone
		    • The following up to date data should be gathered before mining commencement:
		        • Daily and mean monthly air temperatures.

Criteria	Explanation	Summary Comments for JORC Table 1
	Any identified material naturally occurring risks.	• The amplitude of ground temperature variation in the active layer (layer of rock or soil above the permafrost zone). • Stable permafrost temperature distribution at depth. • Snow cover and precipitation measurements. • hydrogeological study o In regions of continuous permafrost, the frost table location can have a large impact on the water regime. Intact permafrost is an impenetrable water boundary. o The Citronen site is in an area of continuous permafrost where the ground stays frozen all year to an ultimate depth of 400m, as projected by literature using measured geothermal gradient. o Citronen is considered to be a dry mine based on the above mentioned and experience from drilling on site. However, an underground hydrogeological study to pre-feasibility level needs to be undertaken to assess the potential (if existing) sources of underground water inflow and risks associated with it. o • Frozen backfill o The understanding of the properties and behaviours of the frozen backfill is fundamental for a successful application of the studied mining method. o Further tests should be conducted around the processing plant slurry for a better understanding of its behaviour when frozen and exposed to heat. This will be the environment that the frozen backfill will be subjected to in studied mining method. • Production rate o Mining Plus recommends a production rate optimization investigation in light of the potential reserves outlined in the study. A lower production rate could reduce costs and improve the financials of the project. • Geotechnical Numeric Modelling o A geotechnical analysis and modelling should be undertaken in the next phases of the study around pillar sizes and ground support. The recommended work to be carried out is outlined below: o Re-log Core data - Logging of RQD at least for 20m into the HW of each ore intersection. o Underground stress analysis using 3DEC (Hangingwall) – the stress analysis will produce information about deformations around the seams hanging wall. The model will generate reliable information that will backup a 3d stress analysis.

Criteria	Explanation	Summary Comments for JORC Table 1
		◦ 3D stress strain analysis (Map3D modelling) – the 3D stress-strain analysis will test ground support, pillar sizes, spans, regional pillars, subsidence of the frozen sedimentary rock when exposed. • Discovery Open pit study update ◦ The addition of the Discovery Open Pit to the financial model increases the EBITDA of the project by 26%. It is recommended that am Open Pit study update be undertaken for a higher confidence on the project financials.
	The status of material legal agreements and marketing arrangements	Not Applicable

Criteria	Explanation	Summary Comments for JORC Table 1
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary government regulations will be received within the timeframes anticipated in the Pre-feasibility orPre-feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	The Citronen Project lies within a granted Exploitation Licence which owned 100% by Ironbark.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	• Part of the Measured and Indicated Resources has been classified as Proved and Probable Reserves. • The Ore Reserve consist of 37% Proved Reserve and 63% Probable Reserve. • The Competent Person, is satisfied that the stated Ore Reserves accurately reflect the outcome of mine planning and the input of economic parameters into optimisation studies.

Criteria	Explanation	Summary Comments for JORC Table 1
	Whether the result appropriately reflects the Competent Person's view of the deposit	
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates	The appropriateness of the Ore Reserve calculation was peer reviewed by peers within the Mining Plus group upon completion of the study.

Discussion of relative accuracy/confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using and approach or procedure deemed appropriate by the Competent Person. For example, the application of	• The Mining component of the PFS has been completed with a relative accuracy of +/-25%.
		• All mining estimates are based on relevant costs in USD or factored estimates from similar mining method and scale projects
		• Where practical and possible, current industry practices have been used to quantify estimations made
		• To mitigate risks associated with the project it is recommended that the following work be undertaken:
		  • hydrogeological study
		  • Frozen backfill analysis

Criteria	Explanation	Summary Comments for JORC Table 1
	statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate	• Geotechnical Numeric Modelling
	The statement should specify whether it relates to global or local estimates, and if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used	

Criteria	Explanation	Summary Comments for JORC Table 1
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	
	Overall economic statement	The economics of the Citronen Project were evaluated based on Earnings before interest, taxes, depreciation and amortization (EBITDA) model. Production, revenues, operating costs, capital costs, and corporate income tax were considered in the financial model. All dollar figures are presented in US dollars ('US$'). The main economic assumptions are a US$ 1.20/lb zinc price, US$ 0.95/lb copper price.

Competent Person's Consent Form

Pursuant to the requirements of ASX Listing Rules 5.6, 5.22 and 5.24 and

Clause 9 of the JORC Code 2012 Edition (Written Consent Statement)

Report Description

2020 Citronen Underground Mine Study

(*insert name or heading of report to be publicly released*) ("Report")

Ironbark Zinc Limited

(*insert name of company releasing the Report)*

Ironbark Zinc Limited, Citronen Beach and Citronen Esrum Deposits

(insert name of the deposit to which the Report refers)

If there is insufficient space, complete the following sheet and sign it in the same manner as this original sheet.

11 September 2020

(Date of Report)

Statement

I, ……………………ANDREW GRANT GASMIER……………………………………… confirm that:

(*insert full name*)

- I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).

- I am a Competent Person as defined by the JORC Code, 2012 Edition, having five years experience which is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.

- I am a Member or Fellow of *The Australasian Institute of Mining and Metallurgy* or the *Australian Institute of Geoscientists* or a '*Recognised Overseas Professional Organisation*' ("ROPO") included in a list promulgated by ASX from time to time.

- I have reviewed the Report to which this Consent Statement applies.
- I am a full time employee of ……………..……………………………………………….. *(insert company name)*

OR

- I am a consultant working for …………MINING PLUS PTY LTD…………………………………. *(insert company name)* and have been engaged by ……Ironbark Zinc Limited…… (*insert company name)* to prepare the documentation for …………Citronen Deposit……………………………………… (*insert deposit name*) on which the Report is based, for the period ended ……September 2020…... (*insert date of resource/reserve statement)*

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Exploration Results, Mineral Resources and/or Ore Reserves *(select as appropriate)*.

CONSENT

I consent to the release of the Report and this Consent Statement by the directors of:

……………………… Ironbark Zinc Ltd ……………………………………………………………......

(insert reporting company name)

Andrew Gasmier	11/09/2020
Signature of Competent Person:	Date:
Professional Membership:	Membership Number:
AUSIMM	211557
	11/09/2020
Signature of Witness:	Print Witness Name and Residence (eg. Town/Suburb):

Additional Deposits covered by the Report for which the Competent Person signing this form is accepting responsibility:

……NIL……

Additional Reports related to the deposit for which the Competent Person signing this form is accepting responsibility:

Andrew Gasmier

Signature of Competent Person:

11/09/2020

Date:

Professional Membership:

AUSIMM

Membership Number:

211557

Signature of Witness:

11/09/2020

Print Witness Name and Residence (eg. Town/Suburb):

Appendix B: Citronen Mineral Resources

JORC Code, 2012 Edition – Table 1 report template

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• All samples are from diamond core, and include a mixture of quarter, half or whole core and BQ, NQ or HQ sizes. Samples are taken from varying intervals from 40cm length to 2.5m length depending on visual differences and compositions analysed by a hand-held Niton XL3t Analyser. • Mineralised zones were analysed with a 30 second reading every 5cm along the core. These results are only used for onsite interpretation and form the basis of the samples chosen for laboratory assay. • Sampling is carried out under QAQC procedures as per industry standards. • Certified sample standards and duplicate samples are added in a ratio of 1 sample per every 10 samples. Most hole collars have been surveyed using a Trimble DGPS system which has an accuracy of <1m; the remaining holes have been surveyed by hand-held GPS with an accuracy of <5m. • Two distinct exploration drilling campaigns have been conducted at Citronen. The first was between 1993 and 1997 conducted by Platinova A/S who drilled 149 holes totalling 32,842.95m. Sample intervals varied from 0.15 - 2.5m, the average sample width was 1.0m. • The second campaign of drilling was conducted by Ironbark Zinc Limited between 2008 and 2011 who drilled 166 diamond holes totalling 34,239.93m. Sample intervals varied from 0.2 - 1.5m and the average sample width was 0.9m. • A sampling program was conducted by Ironbark in 2007, where 2,645 samples were taken from the Platinova drill core. Samples varied from 0.2 - 1.3m and the average sample width was 0.95m. Some of these samples were from previously un-sampled drill core and other samples were quarter core samples from previously assayed intervals, used as a quality control check. • Core samples from the 1993 drilling were sent to Chemex Labs Ltd of North Vancouver B.C. Canada. Samples were crushed, spilt and a portion pulverised followed by a four-acid

Criteria	JORC Code explanation	Commentary
		digest and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) finish. • Core samples from the 1994 drilling were sent to Bondar Clegg Inchcape Testing Services of Ottawa, Ontario, Canada. These samples were crushed split, and a portion pulversied to minus 200 mesh. A four-acid digest was used followed by ICP-MS and also AAS for samples greater than 20% Fe and 15% Zn. • Core samples from the 1995 drilling were sent to Chemex Labs Ltd of Vancouver, B.C., Canada. Samples were crushed, split and a portion pulversied to minus 150 mesh followed by reverse Aqua-Regia digest finished by Atomic Absorption Spectrometry (AAS). • Core samples from the 1996 and 1997 drilling were sent to Cominco Ltd. Laboratory in Rexdale, Ontario, Canada. Samples were crushed, split and a portion pulversied to minus 150 mesh followed by reverse Aqua-Regia digest finished by AAS. • The core samples taken in 2007 by Ironbark were sent to ALS Chemex in Vancouver, B.C., Canada. The samples were crushed, split and a portion pulverised to 75µm, followed by a four acid digest and an AAS technique. • The core samples taken in 2008 - 2011 by Ironbark were sent to ALS Chemex in Ojebyn, Sweden. The samples were crushed, split and a portion pulverised to 75µm, followed by a four acid digest and an Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES) finish.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• All drilling at the Citronen Project has been standard tube diamond drilling, of either BQ, NQ or HQ diameter. In areas with overburden (glacial till) either a tri-cone roller bit or shoe bit was used to drill down to competent rock. Overburden material was discarded. • Most holes were vertical and therefore nor oriented. The few drilled at an angle were oriented using a Reflex tool.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between*	• Recovered drill core was measured every 3m run and any core loss was recorded. • Core recoveries were excellent throughout the project and the need for triple tube drilling was not required. All core was checked & measured by a geologist and rod

Criteria	JORC Code explanation	Commentary
	sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	counts carried out by drillers. • Information from the diamond drilling does not suggest that there is a correlation between recoveries and grade. Diamond drill core from the Citronen deposit has a very high recovery.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• All drill holes were logged for a combination of geological and geotechnical attributes to a level of detail to support a Mineral Resource estimation. • Logging is both qualitative and semi-quantitative in nature; all drill core was photographed. • The total length of all recovered drill core was logged in detail.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Of 7,395 samples, 6,421 are half-core (87%), 968 are quarter-core (13%) and six samples are whole core samples. All core was sawn with a core-saw. • All drilling conducted at Citronen was diamond drilling. • All samples were crushed, split and pulversied at a laboratory. The sample preparation is industry standard for the fine-grained nature of this Sedimentary-Exhalative (SEDEX) mineralisation style. • Laboratory certified standards and duplicates were used alternatively every 10 samples as a quality control measure. • One duplicate per twenty samples was taken. • The sample sizes are appropriate to the fine-grained mineralisation of this SEDEX mineralisation style.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• The assay methods used are considered appropriate and near total digestion. • A Niton XL3t hand-held XRF analyser was used to determine the appropriate core intervals to send for laboratory assay. Each reading was 30 seconds long, taken each 5cm along the drill core. • Duplicate samples and laboratory certified standards have been used alternatively every ten samples. All samples have returned results within an acceptable range.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry*	• Ravensgate Consultants conducted a verification procedure on the Citronen database during the resource estimation process. • Several drill holes have been twinned and

Criteria	JORC Code explanation	Commentary
	procedures, data verification, data storage (physical and electronic) protocols. • *Discuss any adjustment to assay data.*	have shown comparable results including; o Holes CF08-153 & CF08-153A (both vertical holes) were drilled 9m horizontally apart at surface with an elevation difference of 12cm. CF08-153 returned 9.1m @ 5.16% Zn from 14.0m and CF08-153A returned 9.0m @ 5.92% Zn from 14.0m. o Holes CF10-245A and CF10-245B (both vertical holes) were drilled 1 metre apart at surface. The drill holes intersected 12.2m and 13.7m of overburden (glacial till) respectively and intersected the Hangingwall Debris Flow Unit at 175.5m and 174.5m depth respectively. • Primary data was either collected as paperlogs, or entered into a database program or Excel spreadsheet. Paper logs were later transferred to a digital database. Data was verified and checked by senior Ironbark staff and by external consultants Expedio, Ravensgate & Mining Plus. The Database was stored as Excel spreadsheets and a Microsoft Access Database. • There has been no adjustment to the assay data.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All drill holes prior to 2011 were surveyed using a DGPS which has an accuracy of <1m. 2011 holes were picked up by handheld GPS which has proven to have an accuracy of approximately 5m. Downhole surveys were conducted on all angled drill holes using REFLEX (industry standard) equipment. • The Grid System used for all location data points at Citronen is UTM WGS 84 Zone 26. • Ironbark purchased a Digital Elevation Model, produced from satellite imagery, for the Citronen Region that has an accuracy of approximately 2.5m.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Hole spacing varies across the three orebodies; in the Beach Zone and Discovery Zone 30-100m, in the Esrum Zone >150m. • The data spacing and distribution is sufficient to determine geological and grade continuity. • A composite length of 1m was selected after analysis of the raw sample lengths for use in resource calculations.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key*	• The orientation of the drilling is approximately perpendicular to the strike and dip of the mineralisation and therefore should not be biased. • Angled drill holes provided a check against mineralisation width in vertical holes.

Criteria	JORC Code explanation	Commentary
	mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• There are no known biases caused by the orientation of the drill holes.
Sample security	• *The measures taken to ensure sample security.*	• Drill core was kept on site and sample dispatch was overseen by the site manager. Samples were transported by charter plane to Svalbard (Norway), then air freighted to the laboratory by a local logistics company.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Ravensgate reviewed original laboratory assay files and compared them with the database. No errors were found.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Citronen Fjord Deposit is located wholly within Exploitation Licence 2016/30 which is 100% owned by Ironbark Zinc Limited. The licence lies within the Northeast Greenland National Park. • A 2% royalty is payable to vendors. • The Licence was granted in December 2016 for a period of 30 years.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The deposit was previously explored by Platinova A/S between 1993 and 1997.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Citronen Fjord deposit lies within the Palaeozoic Franklinian Basin, a sedimentary basin which extends across Northern Greenland and into Canada. The deposit lies within Ordovician deep water argillaceous rocks, interbedded with carbonate debris flows sourced from the carbonate platform to the south. Base metal mineralisation at Citronen is primarily contained within the Amundsen Land Group mudstones. Three main stratigraphic horizons of mineralisation were identified by Platinova A/S. Known sulphide and zinc mineralisation occurs over an area of 12km in strike (identified to date). The main sulphides present are pyrite, sphalerite and galena. Three types of sulphide mineralisation are present: mound-like masses, interbedded sulphides that form laminae and beds within the mudstones and cross-cutting epigenetic mineralisation that is

Criteria	JORC Code explanation	Commentary
		primarily found in the carbonate debris flows.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• Refer to Annexure 1.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• All reported assays have been length weighted. • No metal equivalents have been reported.
Relationship between mineralisati on widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• The mineralisation is interpreted to be flat-lying to gently dipping and drill holes have been angled (either vertical or at 60 degrees) to intercept the mineralisation as close to perpendicular as possible, therefore resulting in true widths of mineralisation.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Refer to Figures 1A to 1D.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and*	• All results have been reported.

Criteria	JORC Code explanation	Commentary
	high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Geological mapping, geotechnical and metallurgical studies have been conducted and are included in the Feasibility Study for the Project. The Feasibility Study Updated was released on 12 September 2017.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• A positive feasibility study report for the Citronen Project was released to the ASX on 29 April 2013 and an application for an Exploitation (Mining) Licence was granted in December 2016. An update to the Feasibility Study was released on 12 September 2017. The project is being developed to become an operating mine and as the deposit is open in every direction further exploration (drilling) is expected to be conducted in the future.

Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• All drilling data has been reviewed and audited by several internal personnel and external consultants. Data validation techniques include: further assaying historic core, surveying hole collars, use of laboratory standards & duplicates, three internal cross-checks of all drill hole data by geologists and several external consultant cross-checks of all available data. • Three Resource Estimates have been calculated prior to the Ravensgate Resource 2012; o - Wardrop Consulting, 2007 o - Ironbark, 2008 (in-house) o - Ravensgate, 2010 • Examination of the prior estimate reports were used as part of the data validation procedures for the Ravensgate Resource Report 2012.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• One of the Ravensgate Resource Report 2012 authors was involved in Ironbark's exploration programmes and project development in 2007, 2008 & 2009. • The author was integral in the establishment of industry best QA/QC

Criteria	JORC Code explanation	Commentary
		practices and has intimate knowledge of all procedures used on site. • The author of the Wardrop 2007 Resource Estimate Report was involved in the planning and execution of the 1990's drilling. • The author of the Ironbark 2008 in-house Resource Estimate was involved in the planning and execution of the 2007 sampling, and 2008-2011 drilling programs.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The Ravensgate Resource Report 2012 states "Interpretation of the lithological boundaries model for the mineralisation interpretation used for the resource modelling is supported by a significant amount of drill logging or surface mapping and is at an advanced level". Ravensgate classified the Geological Interpretation as a low-moderate risk in the Resource Calculation Risk Assessment. Zinc-lead mineralised domains were initially modelled using MineSight 3-D modelling software. Interpretation was primarily done in cross-section using geological logging and the 3D geological model. Cross sections were oriented on 100m and 50m sections oriented perpendicular to the dominant strike of the domain being modelled.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The area containing the Citronen Resource stretches 6.5km from the north-west corner of the Esrum Zone to the south-east corner of the Discovery Zone. The deposit is exposed at surface in the Discovery Zone and reaches a depth of 575m below surface in the Esrum Zone. The deposit is open along strike and at depth.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine*	• Resource estimations were generated using standard 3D 'uniform block size' modelling techniques. • The Ordinary Kriging interpolation technique was employed owing to the low coefficients of variation observed for sample composites for each domain area. • Three separate block models were created - one each for the Beach, Esrum and Discovery Zones due to the large file sizes. Variable upper high grade Zinc cut-offs were applied to the 1m down-hole composite data set prior to carrying out interpolation. • In Ravensgate's opinion a general level of cut-off at the 98th or 99th percentile level be implemented in conjunction with local domain statistics to help minimise the

Criteria	JORC Code explanation	Commentary
	drainage characterisation). • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	change of over-estimation of grades. Major, minor and down hole axis length for interpolation were obtained by using variograms. These vary depending on Zone. • Higher Zn grade domains were restricted according to the probability statistics observed within each mineralisation domain. Generally the grade cut-off - distance restriction regime was applied to at the 98th or 99th percentile level. • A composite length of 1m was used as it was deemed this length was short enough to honour the dimensions of geological and mineralisation domains being modelled. The composite subsequent data processing and statistical analysis, were carried out in MineSight Compass Software. Wireframe development was guided using a minimum true width of 2m. • An approximate 'half of drill hole spacing' distance of influence approach was used for extrapolating. • Block size was 10m x 10m with bench height of 1m. • No assumptions behind modelling of selective mining units were made. • No assumptions about correlation between variables was made. • Zinc and Lead distribution within the defined domains is relatively predictable and mostly display low coefficients of variation (CV 0.4-1.0). • In Ravensgate's opinion, considering the relatively low coefficients of variations observed for the three main Citronen project areas that only minimal outlier treatment need be considered. Ravensgate used the 98-99th percentile level as the main starting point for the grade restriction implementation level. The restriction distance was also set as 60 to 80 metres depending on the drilling density available within any given mineralisation domain. • Wardrop Consulting completed a resource estimate in 2007 and in 2008 an in-house resource was calculated by Ironbark. Ravensgate consultants were contracted in 2010 to calculate a resource to include the 2008, 2009 and 2010 drilling. Ravensgate were contracted again after the 2011 drilling was completed to provide a resource encompassing all drilling to date at the project. The resource estimates from 2007, 208 and 2010 were used as check

Criteria	JORC Code explanation	Commentary
		estimates against the 2012 Resource. • No by-product recovery assumptions have been made. • Deleterious elements have not been considered in the Resource Calculation based on the results from metallurgical testwork to date. • The resource estimate was reviewed by two Competent Persons from Ravensgate and the block model cross-checked with the drilling data both by Ravensgate and in-house.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Bulk densities were based on dry tonnes.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A 6.0% zinc cut off was used as the resource is being used in mine optimisation studies.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• No specific assumptions were made about mining methods by Ravensgate whilst calculating the resource estimate, other than considering the use of standardised surface (Discovery Zone) and underground mining (Esrum & Beach Zones) methods. Mining Plus consultants have proposed the room and pillar underground mining method to maximise recovery. Further information on mining methods can be found in Ironbark's Feasibility Study Update released 12 September 2017.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Metallurgical testing has been carried out on Citronen drill core after the 2008, 2009, 2010 and 2011 drilling campaigns. The testwork has been conducted by Burnie Laboratories in Tasmania (now part of ALS Global). Ore processing will incorporate the following stages: primary & secondary crushing, dense media separation, grinding and classification, flotation and concentrate thickening and filtration. Very high zinc flotation recoveries of 85% have been achieved. • Further information on metallurgical and process testwork can be found in the Ironbark Feasibility Study Update released 12 September 2017.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider*	• A full Environmental Impact Assessment has been completed and submitted to the Government of Greenland. Environmental factors and management solutions are outlined in the Feasibility Study Report for

Criteria	JORC Code explanation	Commentary
	the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Citronen released on the ASX on 29 April 2013. • Tailings from the mine will be used as backfill underground or stored in an on-ground Tailings Storage Facility. Waste rock will be stored in a waste dump on surface. Environmental studies concluded that mine wastes will not significantly increase the levels of metals in the aquatic or terrestrial environment of the area.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Ironbark conducted numerous empirical Specific Gravity (SG) measurements of drill core from a large range of different rock types and mineralisation styles from the deposit. Ironbark also examined statistical methods to calculate bulk density based on element assay and stoichiometric density. To calculate the bulk density in the deposit, Ironbark produced a theoretical density for each block in the model based upon the interpolated value of Fe, Pb and Zn and rock type coding. This approach is thought to be more accurate than using a constant density value for each domain. The interpolated densities for each block were calculated using a formula that utilised the Ordinary Kriged Fe, Pb and Zn values for that block. The formula assumes that all Zn is reporting to sphalerite (SG of 4.05), Pb to galena (SG of 7.4) and Fe to pyrite (SG of 5.01), with the remainder consisting of mudstone gangue (SG of 2.78).
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The Citronen Resource was classified into Measured, Indicated & Inferred categories using a mathematical calculation based on distance to the nearest composite and the number of composites used in each ore domain. The resource estimate calculated by a Competent Person of Ravensgate Consultants has adhered to the JORC (2004) guidelines and the resource estimate and all its working has been verified by another Competent Person. Both Competent Persons signed off on the resource calculation. The Resource calculation has not been recalculated since 2011 as no further drilling has been completed.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• A JORC compliant resource for Citronen was initially calculated in 2007 by Wardrop Consulting. In 2008 a JORC compliant in-house resource was calculated by Ironbark, then Ravensgate calculated a JORC compliant estimate in 2010 and 2011 to include the latest drilling. Each of these

Criteria	JORC Code explanation	Commentary
		Resource Estimates and Reports have been extensively reviewed inhouse and the latest resource was reviewed by Mining Plus Consultants to ensure its suitability for underground mining optimisation.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• Ravensgate have categorised the relative accuracy/confidence of the Citronen Resource as low risk and stated "The Citronen Project Area continues to be deemed to have potential for economic merit and possible larger scaled development. Further development work should be continued if possible in order to try to extend or increase the underlying resource base".

Annexure 1: Citronen Project Drill Hole Collar Locations & Significant Intercepts

HoleID	Zone	Easting	Northing	RL	Azi	Dip	EOH (m)	From (m)	To (m)	Width (m)	Zn%	Pb%
CF93-01	D	484447	9225037	161.40	360	-90	9.10	5.18	7.92	2.74	3.96	0.22
CF93-01A	D	484447	9225037	161.40	360	-90	78.30	4.90	30.60	25.70	3.49	0.73
								57.80	68.10	10.30	3.42	0.66
CF93-02	D	484124	9225070	101.40	360	-90	78.00	6.70	32.10	25.40	2.07	0.40
CF93-03	D	484180	9224900	80.92	22	-60	100.30	11.90	35.20	23.30	4.01	0.85
	including							***12.40***	***15.93***	***3.53***	***7.62***	***2.55***
CF93-04	D	484260	9224788	87.26	360	-90	75.90	28.80	30.40	1.60	2.50	0.80
CF93-05	D	484009	9225466	145.98	360	-90	91.40	55.57	63.95	8.38	4.28	0.35
CF93-06	D	483881	9225332	115.30	360	-90	91.10	52.30	53.40	1.10	5.40	0.23
CF93-07	D	484658	9224970	200.88	360	-90	91.10	9.44	30.52	21.08	2.75	0.43
CF93-08	D	484341	9225218	170.20	360	-90	91.10	3.62	14.00	10.38	4.65	1.47
	including							***3.62***	***6.92***	***3.30***	***9.49***	***3.81***
CF93-08A	D	484341	9225218	170.20	360	-90	18.50	Ineffective depth				
CF93-09	XX	483240	9225629	90.31	360	-90	101.40	Ineffective depth				
CF93-10B	B	482519	9227127	9.68	360	-90	227.70	80.43	88.51	8.08	5.07	0.29
	including							***83.57***	***86.23***	***2.66***	***10.93***	***0.46***
CF93-11	B	482319	9227206	12.68	360	-90	166.80	92.13	97.18	5.05	3.19	0.29
CF94-09	XX	483240	9225629	90.31	360	-90	116.00	56.00	57.00	1.00	1.11	0.08
CF94-12	NE	483170	9229870	8.14	360	-90	200.00	NSI				
CF94-13	NE	483100	9229690	5.78	360	-90	182.30	67.00	69.00	2.00	2.00	0.02
CF94-14	NE	483940	9231740	10.00	360	-90	140.00	NSI				
CF94-15	B	482376	9226832	28.81	360	-90	149.00	99.20	110.80	11.60	2.13	0.22
CF94-15B	B	482376	9226832	28.89	360	-90	221.00	103.60	111.30	7.70	2.03	0.21
CF94-16	NW	480580	9231840	122.50	360	-90	191.00	67.00	68.00	1.00	0.80	0.04
CF94-17	B	481803	9227808	3.06	360	-90	284.00	166.00	168.50	2.50	2.32	0.16
CF94-18	B	482176	9227044	44.89	360	-90	194.00	**178.20**	**178.80**	**0.60**	**9.70**	**0.24**
CF94-19	B	482050	9227299	25.12	360	-90	215.00	201.10	205.10	4.00	1.80	0.13
CF94-20	D	484450	9225477	278.85	360	-90	106.00	55.00	59.60	4.60	2.26	0.38
CF94-21	B	482226	9227502	6.95	360	-90	194.00	109.00	118.60	9.60	3.07	0.33
CF94-22	D	484662	9225249	267.76	360	-90	191.00	103.50	105.40	1.90	1.95	0.12
CF94-23	B	482533	9227447	7.99	360	-90	206.00	99.00	114.85	15.85	5.07	0.56
	including							***112.05***	***114.85***	***2.80***	***17.91***	***1.22***
CF94-24	D	484881	9225045	268.85	360	-90	178.00	130.00	133.00	3.00	1.68	0.23
CF94-25	D	484536	9224767	134.18	360	-90	86.00	NSI				
CF94-26	B	482789	9227309	18.53	360	-90	209.00	163.00	174.85	11.85	1.93	0.16
CF94-27	BS	483271	9226053	61.28	360	-90	212.00	173.00	176.00	3.00	1.60	0.39
CF94-28	B	482774	9227579	15.60	360	-90	179.00	137.00	138.00	1.00	0.62	0.04
CF94-29	D	483604	9225688	81.36	360	-90	122.00	58.00	65.00	7.00	2.26	0.09
CF94-30	E	481098	9228520	91.99	360	-90	212.00	210.00	211.00	1.00	1.12	0.07
CF94-31	B	482400	9227704	5.32	360	-90	221.00	124.80	134.05	9.25	5.37	0.51
								196.20	202.20	6.00	4.40	0.56
CF94-32	B	482641	9226883	14.82	360	-90	222.40	88.40	91.00	2.60	3.77	0.14
CF94-33	B	482118	9227802	6.23	360	-90	220.00	181.60	204.00	22.40	1.97	0.21
CF94-34	BS	482542	9226601	31.20	360	-90	308.00	215.00	216.80	1.80	2.50	0.47
CF94-35	B	482654	9227828	4.47	360	-90	272.00	230.00	234.55	4.55	4.41	0.35
CF94-36	BS	482553	9226327	51.01	360	-90	401.00	284.00	293.10	9.10	3.40	0.42
CF94-37	B	482326	9227953	3.04	360	-90	257.00	191.00	210.00	19.00	3.12	0.62
CF94-38	BS	482176	9226461	48.61	360	-90	365.00	337.00	340.00	3.00	2.45	0.23

HoleID	Zone	Easting	Northing	RL	Azi	Dip	EOH (m)	From (m)	To (m)	Width (m)	Zn%	Pb%
CF94-39	BS	483057	9225948	46.26	360	-90	275.00	122.00	123.00	1.00	1.14	0.05
CF94-40	B	482589	9227640	6.07	360	-90	240.50	207.50	221.00	13.50	3.09	0.31
CF94-41	XX	483113	9225600	66.44	360	-90	230.00	165.00	166.00	1.00	2.78	0.09
CF94-42	B	482466	9227907	3.77	360	-90	272.00	141.00	146.00	5.00	7.77	0.39
								184.00	198.00	14.00	4.90	0.75
	including							***186.50***	***193.50***	***7.00***	***7.31***	***1.27***
CF94-43	XX	483514	9225427	92.82	360	-90	227.00	93.25	103.00	9.75	7.69	0.18
CF94-44	B	482091	9228025	1.83	360	-90	245.00	176.00	185.00	9.00	3.80	0.31
	including							***180.50***	***183.75***	***3.25***	***8.17***	***0.60***
CF94-45	XX	483303	9225435	91.41	360	-90	287.00	NSI				
CF94-46	XX	483538	9225309	90.85	109	-61	197.00	NSI				
CF94-47	B	482234	9227685	5.82	360	-90	220.00	102.50	106.10	3.60	4.53	0.52
CF94-48	XX	483426	9225608	102.57	360	-90	158.00	70.80	74.60	3.80	2.23	0.22
CF94-49	B	482400	9227546	6.34	360	-90	218.00	105.00	126.15	21.15	4.95	0.47
	including							***116.90***	***124.15***	***7.25***	***9.10***	***1.02***
								177.85	189.00	11.15	4.25	0.21
CF94-50	B	482247	9228178	1.00	360	-90	245.00	172.55	195.20	22.65	2.63	0.17
	including							*174.05*	*178.12*	*4.07*	*6.69*	*0.28*
								210.00	223.00	13.00	2.45	0.61
CF94-51	B	482566	9228172	1.00	360	-90	286.00	153.00	157.30	4.30	4.99	0.30
CF94-52	B	481853	9228254	-0.72	360	-90	141.00	Ineffective depth				
CF94-53	B	481713	9227240	11.33	360	-90	263.00	239.50	240.60	1.10	2.00	0.09
CF95-52	B	481853	9228254	-0.69	360	-90	258.00	192.10	192.66	0.56	3.72	1.25
CF95-54	E	481660	9228610	0.00	360	-90	413.00	288.80	291.25	2.45	5.13	0.38
CF95-55	B	482477	9228519	0.00	360	-90	416.00	345.65	345.90	0.25	1.28	0.14
CF95-56	E	481400	9228270	1.00	360	-90	326.00	183.35	186.00	2.65	2.45	0.56
CF95-57	B	482125	9228428	1.00	360	-90	365.00	260.15	261.35	1.20	2.80	0.19
CF95-58	E	481480	9228970	1.00	360	-90	356.00	253.90	254.75	0.85	1.55	0.14
CF95-59	NW	480990	9229700	30.37	360	-90	338.00	274.10	274.65	0.55	2.00	0.16
CF95-60	E	481217	9227909	28.00	360	-90	238.00	173.00	181.30	8.30	1.51	0.24
CF95-61	B	482836	9228340	0.98	360	-90	356.00	248.52	249.27	0.75	7.60	0.47
CF95-62	E	481278	9227676	4.83	360	-90	233.00	177.00	183.50	6.50	4.12	0.58
CF95-63	B	481554	9228000	2.11	360	-90	188.00	128.80	131.00	2.20	3.97	0.47
CF95-64	B	481825	9228016	0.71	360	-90	223.00	172.80	174.00	1.20	2.51	0.39
CF95-65	B	481585	9227771	0.93	360	-90	212.00	168.00	168.00	1.00	0.99	0.12
CF95-66	E	480868	9228322	112.32	360	-90	393.50	263.62	267.02	3.40	2.68	0.53
CF95-67	E	481101	9228529	92.33	360	-90	437.00	278.00	306.60	28.60	2.95	0.63
CF95-68	E	480819	9228882	171.76	360	-90	467.00	426.22	426.85	0.63	3.94	0.15
CF95-69	E	481103	9228528	92.01	112	-57	384.50	302.90	321.50	18.60	1.85	0.51
CF95-70	E	480887	9228541	132.29	360	-90	390.00	293.00	298.90	5.90	2.63	0.62
CF95-71	E	480630	9229005	232.95	360	-90	317.00	Ineffective depth				
CF95-71B	E	480630	9229005	232.95	360	-90	469.50	NSI				
CF95-72	E	480678	9228524	156.42	360	-90	425.00	355.30	366.80	11.50	4.82	0.44
CF95-73	E	480564	9227688	131.96	360	-90	507.50	443.00	476.17	33.17	2.01	0.40
CF95-74	NW	480233	9230269	231.63	360	-90	513.50	466.00	467.00	1.00	0.77	0.05
CF95-75	E	480537	9228146	152.72	360	-90	442.00	383.00	399.05	16.05	5.19	0.55
	including							*390.00*	*395.15*	*5.15*	*7.59*	*0.61*
CF95-76	E	480488	9228379	187.25	360	-90	449.50	404.80	424.60	19.80	3.74	0.49
CF95-77	WG	478640	9232940	165.69	360	-90	201.00	145.00	148.00	3.00	1.28	0.10

HoleID	Zone	Easting	Northing	RL	Azi	Dip	EOH (m)	From (m)	To (m)	Width (m)	Zn%	Pb%
CF95-78	E	480311	9228067	188.29	360	-90	494.00	451.90	462.54	10.64	4.34	0.29
CF95-79	WG	477640	9232530	326.11	360	-90	437.00	250.92	253.15	2.23	2.06	0.08
CF95-80	E	480786	9227897	77.47	360	-90	329.00	280.57	285.20	4.63	3.97	0.45
CF95-81	E	480401	9228652	219.49	360	-90	509.00	459.00	460.13	1.13	2.59	0.25
CF95-82	WG	478900	9233070	120.01	360	-90	288.00	184.50	186.50	2.00	4.43	0.03
CF95-83	E	480782	9228143	116.21	360	-90	379.00	261.20	270.00	8.80	3.44	0.86
								333.98	340.45	6.47	4.08	0.26
CF95-84	WG	478470	9233220	140.00	360	-90	258.00	226.00	227.00	1.00	2.36	0.10
CF95-85	B	482456	9227318	8.72	360	-90	203.00	85.15	100.75	15.60	3.19	0.33
	including							***108.00***	***111.00***	***3.00***	***12.58***	***1.28***
CF95-86	B	482597	9227321	9.90	360	-90	320.00	152.50	165.75	13.25	2.20	0.27
CF96-87	B	482450	9227628	5.60	360	-90	219.00	128.46	137.10	8.64	6.57	0.56
	including							***128.46***	***131.26***	***2.80***	***13.90***	***1.12***
								177.97	192.00	14.03	3.38	0.27
CF96-88	B	482434	9227809	4.40	360	-90	259.00	131.60	137.22	5.62	6.76	1.62
								178.28	195.00	16.72	4.00	0.84
	including							*185.07*	*189.74*	*4.67*	*5.66*	*0.58*
								219.00	229.00	10.00	1.94	0.74
CF96-89	D	483910	9224933	67.93	360	-90	219.60	218.00	218.50	0.50	7.47	0.28
CF96-90	D	484318	9224948	123.16	360	-90	230.00	31.00	53.60	22.60	3.24	0.72
								37.80	44.00	6.20	5.35	1.18
CF96-91	D	484280	9225048	125.87	360	-90	92.00	16.00	20.00	4.00	2.52	4.31
CF96-92	D	484264	9225274	159.40	360	-90	65.30	NSI				
CF96-93	D	484073	9225199	113.29	360	-90	100.00	**18.20**	**38.00**	**19.80**	**9.58**	**0.04**
								82.00	87.00	5.00	7.18	0.02
CF96-94	D	484193	9224993	105.87	360	-90	93.00	5.50	39.00	33.50	2.87	0.54
CF96-95	SE	484593	9223985	96.82	360	-90	250.00	**95.55**	**97.30**	**1.75**	**14.00**	**0.30**
CF96-96	XX	483435	9225501	81.18	360	-90	155.00	**57.95**	**90.00**	**32.05**	**8.87**	**0.12**
	including							***68.20***	***76.75***	***8.55***	***19.02***	***0.05***
CF96-97	XX	483732	9225321	119.61	360	-90	125.00	**67.00**	**77.65**	**10.65**	**10.50**	**1.10**
								74.29	**75.79**	**1.50**	**24.00**	**0.18**
CF96-98	D	483880	9225286	107.41	360	-90	141.00	**40.00**	**43.02**	**3.02**	**9.55**	**0.33**
CF96-99	XX	483613	9225422	48.08	360	-90	103.50	NSI				
CF96-100	B	482436	9227419	7.57	360	-90	179.00	93.95	103.90	9.95	5.09	0.68
	including							*101.65*	*103.90*	*2.25*	*14.93*	*1.14*
								105.70	114.80	9.10	3.13	0.51
								159.00	179.00	20.00	2.52	0.30
	including							*172.00*	*174.00*	*2.00*	*4.63*	*0.39*
CF96-101	B	482505	9227529	7.07	360	-90	212.70	108.00	115.00	7.00	3.52	0.53
								119.00	**126.00**	**7.00**	**10.22**	**0.53**
	including							***121.65***	***125.00***	***3.35***	***19.17***	***0.95***
								181.00	191.37	10.37	5.26	0.28
CF96-102	XX	483352	9225584	104.50	360	-90	119.00	96.00	98.00	2.00	5.09	0.07
CF96-103	XX	483332	9225508	76.39	360	-90	131.00	NSI				
CF96-104	XX	483557	9225399	92.33	115	-60	131.00	NSI				
CF96-105	B	482420	9227222	10.03	360	-90	99.00	71.80	86.02	14.22	4.29	0.38
	including							*74.28*	*79.25*	*4.97*	*6.65*	*0.43*
CF96-106	XX	483496	9225351	92.90	360	-90	170.00	NSI				
CF96-107	XX	483505	9225500	82.46	360	-90	119.00	48.80	50.15	1.35	2.20	0.06

HoleID	Zone	Easting	Northing	RL	Azi	Dip	EOH (m)	From (m)	To (m)	Width (m)	Zn%	Pb%
CF96-108	B	482340	9227304	9.59	360	-90	125.00	**80.65**	**102.55**	**21.90**	**6.68**	**2.81**
	including							***90.52***	***98.85***	***8.33***	***10.66***	***4.01***
CF96-109	XX	483503	9225498	82.77	230	-62	146.00	138.00	139.00	1.00	4.71	0.16
CF96-110	XX	483437	9225426	84.90	40	-60	137.00	110.00	118.33	8.33	4.51	2.12
CF96-111	B	482244	9227337	9.21	360	-90	173.00	92.15	109.90	17.75	2.11	0.33
CF96-112	XX	483437	9225426	115.35	40	-45	130.00	101.00	102.00	1.00	3.11	0.05
CF96-113	B	482342	9227409	8.57	360	-90	134.00	94.05	117.00	22.95	3.86	0.65
	including							***98.68***	***101.32***	***2.64***	***10.79***	***0.99***
CF96-114	XX	483557	9225394	91.92	198	-77	143.00	NSI				
CF96-115	XX	483388	9225517	78.92	18	-73	127.00	87.45	93.10	5.65	5.63	0.02
CF96-116	XX	483388	9225516	78.81	360	-90	125.00	86.28	95.45	9.17	4.42	0.16
CF96-117	B	482322	9227123	22.04	360	-90	110.00	**84.00**	**88.28**	**4.28**	**7.91**	**0.64**
CF96-118	B	482342	9227623	6.68	360	-90	233.00	**113.73**	**117.70**	**3.97**	**9.18**	**1.11**
CF96-119	D	484051	9225207	110.92	360	-90	77.00	26.25	43.05	16.80	6.23	0.02
	including							***35.52***	***38.95***	***3.43***	***14.04***	***0.03***
CF96-120	D	484051	9225207	110.83	360	-90	146.00	28.08	46.00	17.92	4.97	0.03
	including							*35.39*	*39.55*	*4.16*	*8.36*	*0.03*
								105.10	**106.60**	**1.50**	**6.45**	**14.00**
CF96-121	D	484136	9225183	118.28	360	-90	125.00	108.28	111.80	3.52	6.25	0.49
CF96-122	B	482537	9227840	4.07	360	-90	278.00	143.00	151.06	8.06	6.75	0.34
								197.16	212.00	14.84	3.19	0.43
	including							***208.77***	***211.33***	***2.56***	***10.14***	***1.00***
CF96-123	D	483933	9225268	140.44	195	-75	150.00	71.00	75.00	4.00	4.58	0.37
CF96-124	XX	483637	9225369	52.34	360	-90	109.00	NSI				
CF96-125	B	482565	9228015	2.70	360	-90	260.00	**160.82**	**162.02**	**1.20**	**8.80**	**0.36**
CF96-126	B	482409	9227064	24.69	360	-90	89.00	76.85	81.95	5.10	4.55	0.89
CF96-127	B	482317	9227016	44.35	360	-90	155.00	136.14	139.24	3.10	7.50	0.58
CF96-128	B	482505	9227732	4.93	360	-90	227.00	**133.00**	**140.80**	**7.80**	**9.37**	**0.50**
	including							***139.13***	***140.80***	***1.67***	***22.72***	***0.92***
CF97-129	B	482246	9226963	44.61	360	-90	179.00	151.08	156.1	5.02	4.83	0.68
								160.72	**162.90**	**2.18**	**10.50**	**3.87**
CF97-130	B	482206	9227138	41.80	60	-75	158.00	125.00	130.20	5.20	4.02	0.25
CF97-131	B	482262	9226862	45.73	360	-90	236.00	144.82	149.45	4.63	2.77	0.49
CF97-132	B	482597	9227515	7.24	360	-90	170.00	169.00	170.00	1.00	4.24	0.98
CF97-133	B	482167	9226901	47.33	360	-90	215.00	172.00	176.00	4.00	3.78	0.18
CF97-134	B	482546	9227927	3.53	360	-90	264.00	149.00	157.13	8.13	5.23	0.27
	including							***153.65***	***156.31***	***2.66***	***11.06***	***0.55***
								210.13	217.81	7.68	4.42	0.84
CF97-135	B	482180	9226790	47.07	85	-85	203.00	154.66	158.00	3.34	3.02	0.25
CF97-136	B	482453	9228045	2.71	360	-90	279.00	148.50	153.74	5.24	7.73	0.35
CF97-137	B	482261	9227248	14.11	264	-75	149.00	98.30	104.32	6.02	7.38	0.39
	including							***99.24***	***101.00***	***1.76***	***15.61***	***0.73***
CF97-138	B	482179	9227414	9.55	360	-90	130.00	92.15	99.66	7.51	5.57	0.88
	including							***93.80***	***95.80***	***2.00***	***11.96***	***1.52***
								102.25	108.81	6.56	5.83	0.39
CF97-139	B	482475	9228174	1.51	360	-90	179.00	147.60	158.30	10.70	7.29	0.33
	including							***147.60***	***150.10***	***2.50***	***17.10***	***0.67***
CF97-140	B	482125	9227519	8.38	360	-90	229.30	185.50	193.00	7.50	2.63	0.35
CF97-141	B	482253	9227592	6.54	360	-90	213.65	98.00	104.44	6.44	4.84	0.96

HoleID	Zone	Easting	Northing	RL	Azi	Dip	EOH (m)	From (m)	To (m)	Width (m)	Zn%	Pb%
CF97-142	B	482337	9227775	4.60	360	-90	245.00	**131.90**	**133.05**	**1.15**	**21.50**	**2.60**
CF97-143	B	482470	9228283	1.00	360	-90	266.00	235.68	237.11	1.43	4.00	0.10
CF08-144	BS	483044	9226369	20.30	360	-90	251.00	206.25	208.20	1.95	3.18	0.21
CF08-144A	BS	483043	9226366	20.30	360	-90	47.50	Ineffective depth				
CF08-145	NE	483282	9229486	13.87	360	-90	459.00	373.72	375.70	1.98	6.95	0.38
CF08-146	NW	481150	9231550	16.52	360	-90	359.00	108.00	109.20	1.20	4.37	0.40
CF08-147	BS	482459	9226119	54.97	360	-90	422.30	276.05	286.45	10.40	3.61	0.59
CF08-148	BS	482501	9225770	61.12	60	-60	404.00	296.00	303.80	7.80	2.13	0.20
CF08-149	NE	483464	9228605	44.04	360	-90	468.00	317.35	323.90	6.55	7.67	0.39
	including							***317.35***	***320.80***	***3.45***	***10.78***	***0.40***
CF08-150	BS	482353	9226324	50.65	360	-90	451.00	334.60	342.20	7.60	4.56	0.59
CF08-151	NE	483663	9228919	83.40	360	-90	351.00	22.75	23.45	0.70	2.39	0.01
CF08-152	NE	483548	9228388	48.69	360	-90	338.00	306.00	308.00	2.00	3.56	0.43
CF08-153	D	483928	9225742	123.81	360	-90	116.40	14.00	23.10	9.10	5.16	0.12
CF08-153A	D	483930	9225733	123.93	360	-90	194.40	14.00	23.00	9.00	5.92	0.03
	including							***15.00***	***18.00***	***3.00***	***8.97***	***0.04***
CF08-154	D	483702	9226240	95.96	360	-90	262.70	110.00	113.00	3.00	1.32	0.08
CF08-155	B	483403	9227135	77.48	360	-90	267.00	117.00	123.00	6.00	2.83	0.10
CF08-156	D	484272	9224692	80.29	360	-90	257.40	24.00	29.60	5.60	1.16	0.18
CF08-157	E	480907	9227444	37.09	360	-90	365.00	338.90	341.40	2.50	2.15	0.27
CF08-158	D	484165	9224735	65.45	360	-90	53.00	26.20	29.30	3.10	1.71	0.17
CF08-159	D	484082	9224828	58.47	360	-90	48.40	29.00	32.00	3.00	2.29	0.18
CF08-160	D	484079	9224937	63.40	360	-90	44.00	4.90	24.45	19.55	3.47	0.70
	including							*11.70*	*16.00*	*4.30*	*7.51*	*0.53*
CF08-161	E	480598	9227423	132.85	360	-90	332.00	Ineffective depth				
CF08-161A	E	480598	9227423	132.86	360	-90	449.00	430.70	431.30	0.60	5.63	0.07
CF08-162	D	484006	9225010	60.12	360	-90	44.40	29.35	40.10	10.75	4.50	0.52
CF08-163	D	484211	9224835	81.02	360	-90	47.40	22.00	31.00	9.00	2.02	0.36
CF08-164	D	484387	9224854	117.63	360	-90	45.10	38.80	39.80	1.00	3.11	0.27
CF08-165	D	484413	9224960	147.61	360	-90	46.00	**2.50**	**10.40**	**7.90**	**5.63**	**3.46**
	including							***2.50***	***4.30***	***1.80***	***8.82***	***11.85***
CF08-166	BS	482348	9226689	31.55	360	-90	228.60	NSI				
CF08-166A	BS	482354	9226689	31.55	360	-90	80.00	NSI				
CF08-167	E	480455	9227901	148.32	360	-90	440.00	394.60	409.25	14.65	3.81	0.27
CF08-168	D	484222	9225154	128.47	360	-90	109.50	70.07	71.72	1.65	3.28	0.02
CF08-169	E	480290	9227792	168.37	360	-90	485.00	483.35	485.00	1.65	3.56	1.23
CF08-170	D	484553	9225008	175.67	360	-90	18.00	Ineffective depth				
CF08-170A	D	484553	9225008	175.73	360	-90	97.00	17.90	37.00	19.10	4.35	0.84
CF08-171	E	480351	9227590	148.41	360	-90	579.40	528.40	548.55	20.15	1.87	0.30
CF08-172	D	484827	9224833	205.21	360	-90	209.90	205.05	207.50	2.45	0.91	0.10
CF08-173	E	480178	9227644	175.93	360	-90	605.00	546.85	554.50	7.65	2.25	0.58
CF08-174	SE	484905	9223940	105.00	20	-89	236.00	98.20	98.70	0.50	0.96	0.02
CF08-175	BS	482468	9226119	55.12	90	-60	423.63	267.52	281.81	14.29	3.64	0.45
	including							*272.50*	*280.03*	*7.53*	*4.63*	*0.40*
CF08-176	B	482467	9226974	38.97	90	-65	92.00	88.60	92.00	3.40	7.49	0.83
CF08-177	B	482465	9226973	38.96	90	-80	128.00	89.35	102.28	12.93	4.49	0.55
CF08-178	BS	482424	9225931	57.43	360	-90	409.00	376.30	380.00	3.70	7.21	0.79

HoleID	Zone	Easting	Northing	RL	Azi	Dip	EOH (m)	From (m)	To (m)	Width (m)	Zn%	Pb%
CF08-179	BS	482400	9226413	48.68	15	-75	310.55	293.00	299.37	6.37	3.71	0.68
CF08-180	BS	482461	9225774	60.05	360	-90	255.00	Ineffective depth				
CF08-181	BS	482289	9226147	52.63	360	-90	396.00	391.00	394.00	3.00	4.02	0.09
CF09-182	B	482441	9226925	39.83	360	-90	114.00	**93.75**	**98.00**	**4.25**	**11.07**	**0.86**
CF09-183	B	482439	9226923	40.10	100	-70	117.00	**94.55**	**99.00**	**4.45**	**11.29**	**1.17**
CF09-184	B	482402	9226915	39.13	360	-90	117.00	102.00	105.00	3.00	6.60	0.51
CF09-185	B	482421	9226908	39.55	180	-70	120.00	**98.30**	**105.00**	**6.70**	**8.27**	**0.92**
CF09-186	B	482418	9226981	38.66	360	-90	120.00	99.00	113.00	14.00	4.48	0.61
CF09-187	B	482440	9226985	38.81	30	-70	129.00	111.00	117.00	6.00	7.46	0.67
CF09-188	B	482371	9226972	36.76	360	-90	129.00	102.50	109.00	6.50	4.46	0.32
CF09-189	B	482429	9226822	28.43	360	-90	105.00	89.50	96.50	7.00	3.46	0.33
CF09-190	B	482482	9226776	28.40	360	-90	117.00	89.20	99.00	9.80	2.28	0.32
CF09-191	B	482476	9226849	27.57	360	-90	105.00	76.50	82.80	6.30	7.66	0.76
CF09-192	B	482508	9226853	26.56	30	-70	84.00	66.50	71.00	4.50	5.70	0.63
CF09-193	B	482521	9226827	27.20	360	-90	78.00	58.40	71.00	12.60	4.95	0.73
CF09-194	B	482581	9226900	16.58	360	-90	61.50	42.00	47.00	5.00	3.69	0.33
CF09-195	B	482577	9226945	15.77	270	-70	72.00	43.00	49.00	6.00	3.84	0.42
CF09-196	B	482553	9227018	11.13	360	-90	66.50	22.10	26.00	3.90	2.92	0.22
CF09-197	B	482470	9227058	23.01	360	-90	87.00	49.50	57.00	7.50	4.20	0.58
CF09-198	B	482378	9227102	21.82	360	-90	99.00	77.00	80.10	3.10	7.87	0.63
CF09-199	B	482402	9227150	15.30	360	-90	102.00	75.00	81.50	6.50	3.70	0.20
CF09-200	B	482357	9227167	15.10	360	-90	102.00	82.85	85.85	3.00	7.66	0.51
CF09-201	B	482290	9227203	14.50	180	-70	114.00	**89.00**	**93.00**	**4.00**	**9.38**	**0.59**
CF09-202	B	482272	9227216	14.06	220	-70	117.00	96.00	102.00	6.00	7.57	0.41
	including							***96.00***	***99.00***	***3.00***	***12.10***	***0.65***
CF09-203	B	482455	9227175	10.23	360	-90	90.00	59.10	61.40	2.30	5.32	0.38
CF09-204	B	482425	9227221	9.83	360	-90	99.00	76.05	77.70	1.65	4.20	0.21
CF10-205	B	481991	9228098	0.25	360	-90	198.00	165.50	167.50	2.00	3.27	0.21
CF10-206	B	482530	9228100	1.95	360	-90	240.00	157.00	164.00	7.00	5.40	0.27
CF10-207	B	482625	9227890	3.78	360	-90	195.25	NSI				
CF10-208	NE	483435	9228730	26.56	360	-90	339.70	NSI				
CF10-209	B	482595	9227780	4.98	360	-90	171.00	NSI				
CF10-210	B	482475	9227750	4.98	360	-90	159.00	**130.00**	**135.00**	**5.00**	**11.67**	**0.53**
CF10-211	B	482500	9227675	5.62	360	-90	228.00	**132.00**	**137.50**	**5.50**	**14.05**	**0.70**
								192.00	201.00	9.00	5.74	0.36
CF10-212	B	482530	9227600	6.81	360	-90	231.00	198.00	203.00	5.00	4.02	2.62
CF10-213	B	482500	9227645	6.00	360	-90	219.00	**130.50**	**137.50**	**7.00**	**11.56**	**0.55**
	including							***133.50***	***137.00***	***3.50***	***18.97***	***0.85***
								191.50	199.00	7.50	5.51	0.42
CF10-214	B	482520	9227370	8.00	360	-90	125.05	96.00	109.00	13.00	6.63	0.70
	including							***102.00***	***105.00***	***3.00***	***18.83***	***1.58***
CF10-215	B	482400	9227600	6.16	360	-90	222.00	121.50	132.00	10.50	8.86	0.65
	including							***122.00***	***127.00***	***5.00***	***13.49***	***0.74***
CF10-216	B	482430	9227365	8.18	265	-77	194.70	89.00	102.00	13.00	4.80	0.47
	including							***96.00***	***99.00***	***4.00***	***13.41***	***0.74***
CF10-217	B	482430	9227490	6.82	360	-90	147.00	107.00	121.50	14.50	6.12	0.66
	including							***113.00***	***116.00***	***3.00***	***11.52***	***1.20***
CF10-218A	B	482468	9227852	4.15	360	-90	69.00	Ineffective depth				
	B	482466	9227846	4.19	360	-90	261.00	134.50	142.00	7.50	4.67	0.31

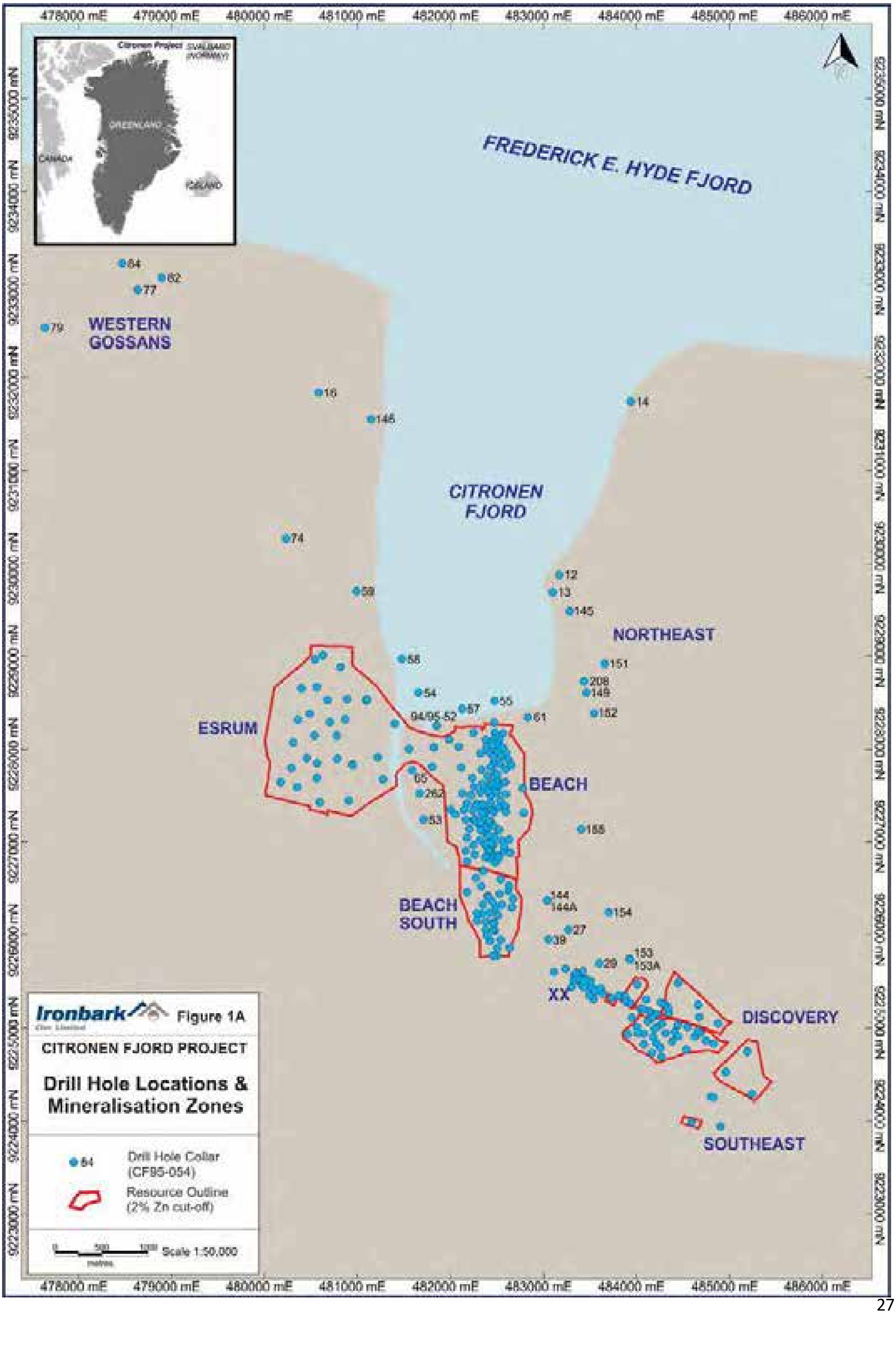
HoleID	Zone	Easting	Northing	RL	Azi	Dip	EOH (m)	From (m)	To (m)	Width (m)	Zn%	Pb%
CF10-218B				***including***				***134.50***	***137.50***	***3.00***	***8.08***	***0.43***
								184.00	194.00	10.00	4.28	0.56
CF10-219	B	482480	9227568	6.00	270	-72	59.00	Ineffective depth				
CF10-220A	B	482590	9227380	7.57	270	-80	33.00	Ineffective depth				
CF10-220B	B	482594	9227386	8.56	270	-80	218.10	169.25	172.85	3.60	4.05	0.29
CF10-221	B	482420	9227960	3.09	360	-90	258.00	131.00	139.00	8.00	5.12	0.25
				including				***137.00***	***139.00***	***2.00***	***12.39***	***0.56***
								184.00	196.50	12.50	5.41	0.81
								233.00	249.50	16.50	2.93	0.35
CF10-222	B	482470	9228110	2.00	360	-90	279.00	**155.00**	**158.00**	**3.00**	**10.14**	**0.42**
								260.60	264.70	4.10	6.17	0.29
CF10-223	B	482505	9227980	3.00	360	-90	272.40	145.00	153.00	8.00	5.64	0.22
				including				***151.00***	***153.00***	***2.00***	***12.33***	***0.37***
CF10-224	B	482631	9227022	11.22	360	-90	59.00	Ineffective depth				
CF10-225	B	482390	9228015	2.74	360	-90	258.00	186.55	195.00	8.45	4.05	0.55
								237.00	243.00	6.00	4.25	0.30
CF10-226	B	482380	9228100	1.90	360	-90	162.80	Ineffective depth				
CF10-227	B	482597	9227957	3.35	360	-90	276.00	225.40	230.50	5.10	6.78	0.90
CF10-228	B	482510	9228046	2.70	360	-90	246.00	**149.00**	**157.00**	**8.00**	**7.56**	**2.72**
				including				***154.50***	***157.00***	***2.50***	***13.99***	***0.52***
CF10-229	B	482352	9227354	9.14	360	-90	184.20	97.00	115.50	18.50	4.73	0.69
CF10-230	D	484013	9224943	56.79	360	-90	57.00	21.40	24.50	3.10	3.33	0.61
CF10-231	D	483951	9225113	60.88	90	-70	65.00	NSI				
CF10-232	XX	483811	9225347	102.64	180	-70	122.00	NSI				
CF10-233	D	484105	9225309	135.87	360	-90	128.00	NSI				
CF10-234	D	484307	9225252	167.13	360	-90	71.00	NSI				
CF10-235	D	484307	9225252	167.09	45	-70	65.00	NSI				
CF10-236	D	484171	9225111	114.20	10	-70	89.15	NSI				
CF10-237	D	484226	9225017	113.78	360	-90	44.00	7.00	24.00	17.00	1.99	0.48
								28.00	40.00	12.00	2.56	0.65
CF10-238	D	484349	9225160	156.45	304	-70.8	47.00	10.20	11.20	1.00	3.16	1.81
CF10-239	D	484348	9225160	156.46	350	-70	44.00	6.00	7.00	1.00	3.23	0.47
CF10-240	D	484632	9224904	188.53	360	-90	71.00	2.70	13.00	10.30	4.42	0.79
								4.30	8.00	3.70	7.49	0.85
CF10-241	D	484632	9224904	188.55	135	-70	92.00	3.70	19.00	15.30	3.72	0.63
CF10-242A	D	484690	9224952	207.81	44	-70	50.65	10.50	29.00	18.50	4.11	1.22
CF10-243	D	484690	9224952	207.74	360	-90	39.70	11.20	31.00	19.80	4.04	0.73
CF10-244	D	484674	9225115	246.83	360	-90	63.00	Ineffective depth				
CF10-245A	E	480944	9227833	56.31	360	-90	188.00	Ineffective depth				
CF10-245B	E	480951	9227829	55.78	360	-90	302.00	241.00	243.00	2.00	7.41	0.44
CF10-246	E	480561	9227844	140.50	360	-90	440.00	378.00	405.50	27.50	2.82	0.77
				including				***400.50***	***402.50***	***2.00***	***10.37***	***2.80***
CF10-247	SE	485246	9224288	167.96	225	-70	285.00	241.50	242.00	0.50	5.39	-
CF10-248	XX	483418	9225510	79.72	360	-90	122.00	92.00	97.00	5.00	5.06	0.16
CF10-249	XX	483418	9225510	79.75	45	-70	122.40	**58.30**	**60.30**	**2.00**	**20.71**	**0.10**
								69.50	**98.00**	**28.50**	**12.84**	**0.07**
				including				***69.50***	***84.50***	***15.00***	***20.23***	***0.03***

HoleID	Zone	Easting	Northing	RL	Azi	Dip	EOH (m)	From (m)	To (m)	Width (m)	Zn%	Pb%
CF10-250	B	482349	9227356	8.99	360	-90	126.00	87.30	106.00	18.70	4.36	0.97
	including							***98.30***	***103.15***	***4.85***	***6.76***	***2.23***
CF10-251	B	482284	9227415	8.38	360	-90	165.00	90.00	112.00	22.00	3.21	0.33
	including							*93.50*	*67.00*	*3.50*	*6.12*	*0.55*
CF10-252	B	482272	9227379	8.31	360	-90	198.20	91.50	115.50	24.00	2.84	0.30
CF10-253	B	482323	9227530	7.70	360	-90	240.00	103.20	109.00	5.80	7.49	0.55
								166.00	179.00	13.00	3.07	0.22
	including							*169.50*	*175.00*	*5.50*	*5.27*	*0.71*
CF10-254	B	482370	9227251	9.88	360	-90	165.00	70.00	92.00	22.00	3.45	0.80
	including							*71.00*	*74.00*	*3.00*	*5.38*	*1.17*
	and							87.00	92.00	4.00	4.64	1.62
CF10-255	B	482370	9227251	9.90	216	-70	180.00	77.40	90.00	12.60	5.35	0.58
	including							***84.00***	***88.00***	***4.00***	***9.67***	***1.07***
CF10-256	B	482375	9227317	9.48	360	-90	165.00	80.00	104.50	24.50	6.44	2.00
	B	***including***						***94.00***	***104.00***	***10.00***	***10.80***	***3.41***
CF10-257	B	482253	9227230	14.12	240	-70	185.00	101.00	107.00	6.00	6.17	0.29
CF10-258	B	482167	9227242	26.22	360	-90	211.50	119.85	123.35	3.50	3.84	0.23
CF10-259	B	482001	9227346	23.54	360	-90	51.00	Ineffective depth				
CF10-260	BS	482375	9226053	54.56	360	-90	362.00	347.00	350.00	3.00	4.38	0.30
CF10-261	BS	482526	9226443	49.12	360	-90	326.00	313.30	318.00	4.70	5.28	0.26
CF10-262	B	481668	9227519	5.78	360	-90	27.00	Ineffective depth				
CF10-263A	BS	482410	9226405	49.15	360	-90	52.00	Ineffective depth				
CF10-263B	BS	482410	9226405	49.16	360	-90	336.00	303.50	314.00	10.50	3.68	0.83
CF10-264	BS	482417	9226239	52.53	360	-90	372.00	312.40	320.00	7.60	4.72	1.05
CF10-265	BS	482487	9226285	51.67	360	-90	373.20	307.00	312.50	5.50	6.89	1.04
CF10-266	BS	482673	9226392	49.56	360	-90	297.00	259.50	260.25	12.10	4.38	0.61
CF10-267A	BS	482659	9226292	51.42	360	-90	55.00	Ineffective depth				
CF10-267B	BS	482662	9226293	51.35	360	-90	282.00	NSI				
CF10-268	BS	482621	9226472	48.38	360	-90	63.00	Ineffective depth				
CF10-269	BS	482455	9226349	50.54	360	-90	327.00	296.00	308.00	12.00	2.50	0.61
CF10-270	XX	483406	9225468	81.69	52	-70	134.00	100.50	105.60	5.10	3.82	0.23
CF10-271	XX	483454	9225527	78.98	225	-70	39.00	Ineffective depth				
CF10-271A	XX	483454	9225527	78.98	225	-75	137.00	**61.00**	**95.00**	**34.00**	**9.09**	**0.39**
	including							***61.00***	***81.00***	***20.00***	***14.10***	***0.24***
CF10-272	XX	483338	9225562	74.40	200	-75	152.00	119.50	121.00	1.50	3.69	0.14
CF10-273	BS	482640	9225864	50.94	360	-90	358.25	266.00	267.50	1.50	5.74	0.46
CF10-274	BS	482541	9225943	49.59	360	-90	326.00	300.00	303.00	3.00	3.48	0.20
CF10-275	D	484451	9224906	146.92	360	-90	90.00	55.60	59.60	4.00	1.94	0.82
CF10-276	D	484748	9224863	201.00	360	-90	104.00	3.80	19.00	15.20	2.21	0.35
CF10-277	SE	485192	9224749	288.01	360	-90	260.00	237.00	252.50	15.50	2.23	0.40
CF10-278	SE	484966	9224528	180.22	360	-90	278.00	222.00	225.00	3.00	1.91	0.17
CF10-279	SE	484806	9224258	115.19	360	-90	24.00	Ineffective depth				
CF10-280	SE	484829	9224251	118.32	360	-90	300.00	160.75	163.00	2.25	2.73	0.61
CF10-281	BS	482342	9226231	52.30	360	-90	282.00	Ineffective depth				
CF10-282	BS	482476	9226038	54.99	360	-90	242.00	158.00	159.00	1.00	1.89	0.13
CF10-283	BS	482509	9226202	53.26	360	-90	170.00	Ineffective depth				

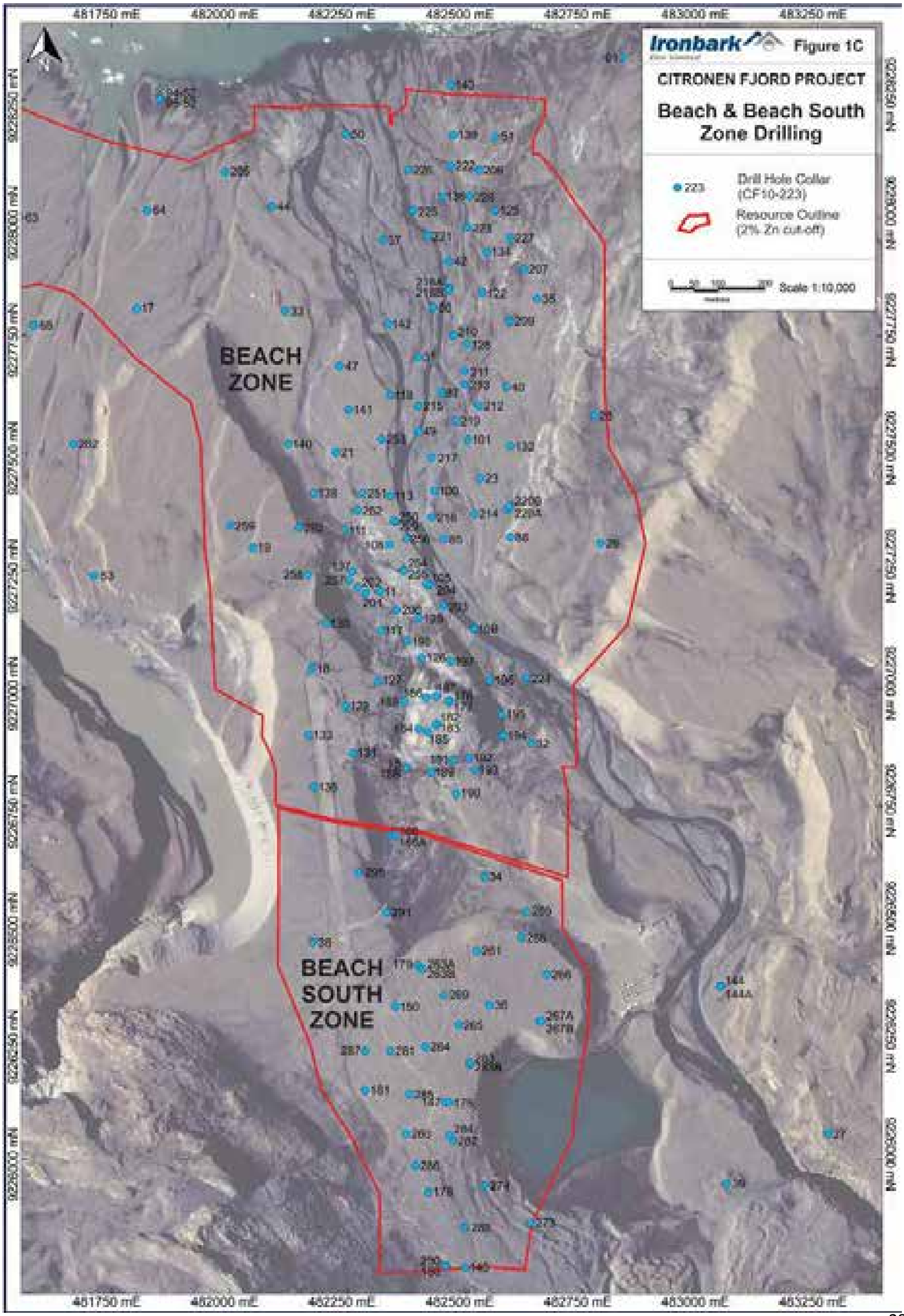
HoleID	Zone	Easting	Northing	RL	Azi	Dip	EOH (m)	From (m)	To (m)	Width (m)	Zn%	Pb%
CF10-283B	BS	482510	9226205	53.24	360	-90	279.00	245.00	255.55	10.55	4.13	0.57
CF10-284	BS	482467	9226050	55.35	360	-90	323.00	297.00	304.50	7.50	3.10	0.51
CF10-285	BS	482383	9226139	53.76	360	-90	330.00	304.20	309.00	4.80	5.20	0.45
CF10-286	BS	482396	9225986	56.52	360	-90	397.70	369.00	370.00	1.00	5.39	0.49
CF10-287	BS	482289	9226230	51.24	360	-90	385.00	356.50	359.00	2.50	3.40	1.45
CF10-288	BS	482500	9225855	62.00	360	-90	347.50	327.50	340.50	13.00	1.51	0.11
CF10-289	BS	482632	9226526	33.46	225	-80	295.60	258.65	266.50	7.85	2.40	0.41
CF11-290	BS	482460	9225774	47.00	85.7	-80.3	383.30	338.50	343.50	5.00	3.23	0.23
CF11-291	BS	482333	9226524	49.00	360	-90	303.00	283.50	288.05	4.55	7.10	0.59
	including							***283.50***	***285.00***	***1.50***	***16.39***	***1.22***
CF11-292	B	482147	9227342	43.00	360	-90	140.00	114.00	121.70	7.70	7.01	0.51
CF11-293	E	480361	9228317	206.27	360	-90	497.00	448.00	460.10	12.10	2.87	0.20
CF11-294	E	480702	9228292	138.25	290	-84.2	401.00	349.30	358.80	9.50	5.27	0.90
		including						***349.30***	***353.00***	***3.70***	***10.26***	-
CF11-295	BS	482275	9226610	51.00	54.2	-72.7	314.00	297.00	304.75	7.75	3.05	0.19
CF11-296	E	480566	9228662	178.78	187	-89	460.00	404.35	416.70	12.35	3.08	0.27
CF11-297	E	480542	9228966	231.25	360	-90	545.00	503.90	504.55	0.65	5.42	0.25

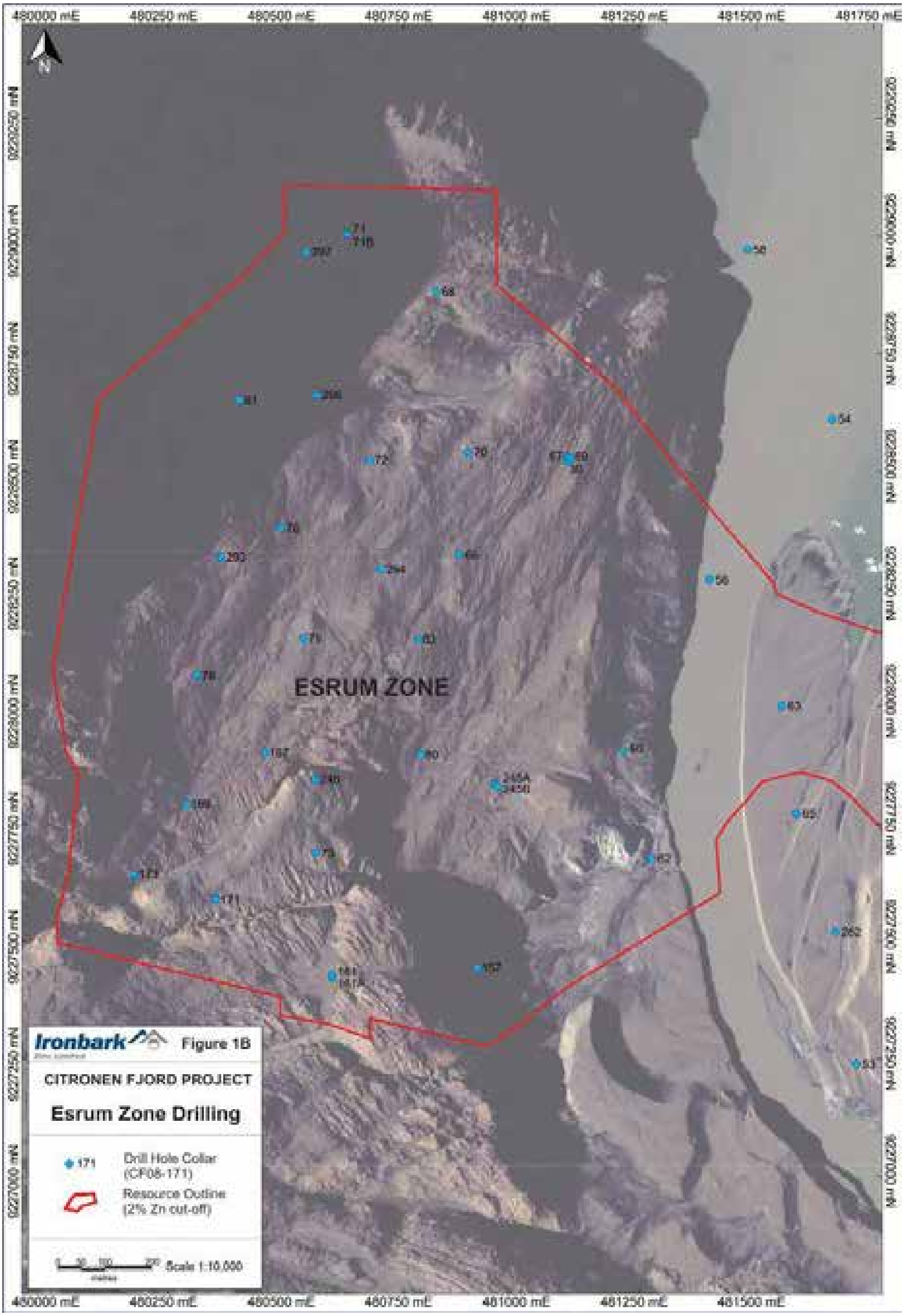
Hole Prefix		**Zone**		
CF93-	Holes drilled in 1993	E	Esrum	
CF94-	Holes drilled in 1994	B	Beach	
CF95-	Holes drilled in 1995	BS	Beach South	
CF96-	Holes drilled in 1996	D	Discovery	
CF97-	Holes drilled in 1997	XX	XX Zone	
CF08-	Holes drilled in 2008	SE	Southeast	
CF09-	Holes drilled in 2009	NE	Northeast	
CF10-	Holes drilled in 2010	WG	Western Gossans	
CF-11	Holes drilled in 2011			
NSI	No Significant Intercept			

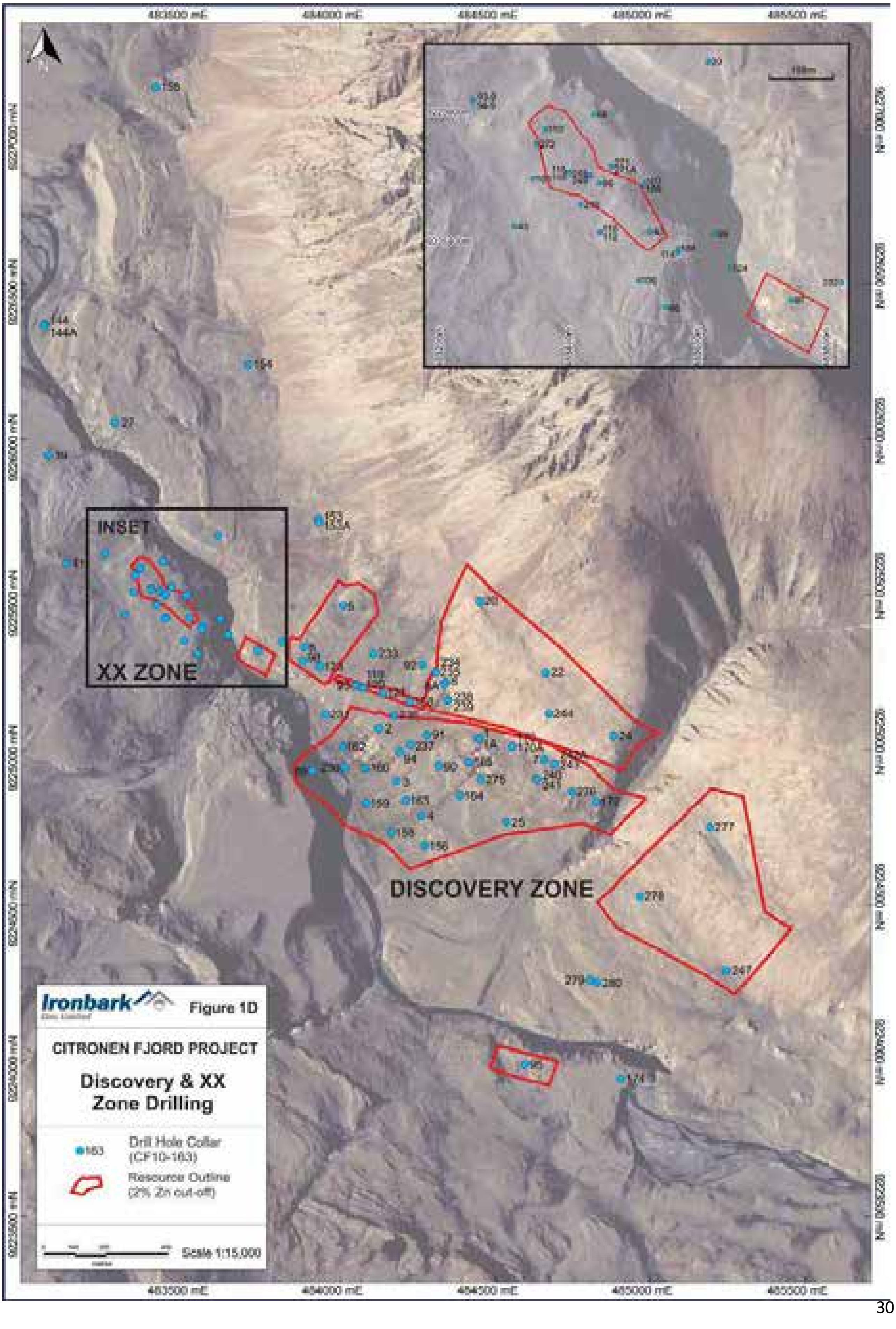
Co-ordinates: UTM Zone 26N WGS84



FREDERICK E. HYDE FJORD
CITRONEN FJORD
WESTERN GOSSANS
ESRUM
BEACH
BEACH SOUTH
NORTHEAST
XX
DISCOVERY
SOUTHEAST
GREENLAND
CANADA
ICELAND
Citronen Project
478000 mE
479000 mE
480000 mE
481000 mE
482000 mE
483000 mE
484000 mE
485000 mE
486000 mE
Ironbark Zinc Limited
Figure 1A
CITRONEN FJORD PROJECT
Drill Hole Locations & Mineralisation Zones
Drill Hole Collar (CF95-054)
Resource Outline (2% Zn cut-off)
Scale 1:50,000
metres


Ironbark Figure 1C
CITRONEN FJORD PROJECT
Beach & Beach South Zone Drilling
223 Drill Hole Collar (CF10-223)
Resource Outline (2% Zn cut-off)
Scale 1:10,000
BEACH ZONE
BEACH SOUTH ZONE
481750 mE
482000 mE
482250 mE
482500 mE
482750 mE
483000 mE
483250 mE


480000 mE
480250 mE
480500 mE
480750 mE
481000 mE
481250 mE
481500 mE
481750 mE
N
ESRUM ZONE
Ironbark
Figure 1B
CITRONEN FJORD PROJECT
Esrum Zone Drilling
171
Drill Hole Collar
(CF08-171)
Resource Outline
(2% Zn cut-off)
Scale 1:10,000


INSET
XX ZONE
DISCOVERY ZONE
Ironbark Zinc Limited
Figure 1D
CITRONEN FJORD PROJECT
Discovery & XX Zone Drilling
Drill Hole Collar (CF10-163)
Resource Outline (2% Zn cut-off)
Scale 1:15,000

Appendix C: Citronen Mine Plan Optimisation Results

Ironbark Zinc Limited

Level 3
22 Railway Road
Subiaco 6008
Western Australia

PO Box 8187
Subiaco East
WA 6008
T: +61 8 6146 5325
www.ironbark.gl
admin@ironbark.gl

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Australian Securities Exchange Limited
Level 40, Central Park,
152-158 St Georges Terrace
PERTH WA 6000

CITRONEN MINE PLAN OPTIMISATION

Ironbark Zinc Limited ("**Ironbark**", "**the Company**" or "**IBG**") is pleased to provide an update on the recently completed mining review undertaken by leading international Mining Consultancy Mining Plus (**Optimisation Study**) for the Company's 100% owned Citronen Zinc-Lead Project in Greenland (**Citronen**).

Highlights

- Mining optimisation conducted at USD1.20/lb (USD2,645/t) in current study (vs. USD 1.38lb in 2017)[1]
- **3.3Mtpa operation confirmed** as the optimum scale[1]
- **An additional 90,000t of Zn metal delivered in first 6 years** vs. prior plan
- **Initial 14yr mine life confirmed** from a combined Underground and Open Pit Operation[1]
- Introduction of **design flexibility to accommodate extensions to mine life** in the event of a continuing rising Zn price (see Sensitivity Analysis on p.4 below)
- Integration of progressive ore pillar recovery using tailings as backfill into mining method
- **Improved safety and operating practices** arising from the adoption of a twin decline design
- All mining costs, both capex and opex, have been derived from first principles using current technologies and resource pricing
- Concentrate **offtake agreements with major IBG shareholders Glencore Pls and Trafigura** persist such that 70% of the Zinc concentrate to be produced from Citronen is committed.

1. Refer to ASX release dated 12 September 2017, "Citronen Feasibility Study Update", for full details of the underlying assumptions underpinning the Citronen Feasibility Study. The Company confirms that all material assumptions underpinning production targets or forecast financial information derived from a production target continue to apply and have not materially changed.

Ironbark Managing Director Michael Jardine commented:

"This study represents the first instalment of several reviews currently being undertaken to ensure that the Feasibility Study for the Citronen Zinc Project is completely refreshed by taking advantage of the many changes in technologies, standards and pricing that have occurred since the original study work was completed in 2012.

These initial findings, focussed on the mining operations, demonstrate the wisdom of this approach and serve to reinforce the magnitude of the opportunity that the Citronen ore deposit represents. These mining study results further de-risk the project by the adoption of updated mining practices, an optimised new mine plan and more efficient production schedule.

Against the backdrop of the current trend in rising Zinc prices, the mining study results confirm that Citronen represents an outstanding project development opportunity. Globally, it is now being positioned to be one of the next major zinc projects for investment with its long mine life, substantial further exploration upside, a granted mining licence in a very stable jurisdiction and continued support from the two largest base metal traders in the world, Glencore and Trafigura.

The Ironbark Board remains committed to its strategy of completing the refresh of all key elements of the previous feasibility study work ahead of pursuing a project investment decision. To this end, work is currently underway on updating the metallurgical flowsheet, logistics, project execution, communications and power generation. Notwithstanding the *difficulties posed by advancing this work during the current Covid-19 pandemic, it is expected that all study streams will be finalised by the first quarter of 2021.*

Ironbark remains fully funded through to the completion of this program and management continues to undertake preparatory discussions with a number of potential counterparties in order to facilitate the future development step.

In conjunction with the Citronen work stream, management is also reviewing opportunities to re-engage in domestic exploration. This scope includes exploration opportunities within the current Ironbark portfolio, as well as, potential acquisitions. The Board and Management will only pursue exploration programs that offer realistic opportunities for near term success."

Cautionary Statement

Please note that Production Targets within this announcement are based on a proportion of inferred resources. There is low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised. The estimated mineral resources underpinning the production targets were released to the ASX on 12th March 2020.

Overview

Process

In early 2020, the Ironbark Board committed to undertake a comprehensive revision of the Feasibility Study for the Citronen Project to ensure that it reflected the significant advance in technologies and changes in pricing that have occurred since the original study was first completed.

As part of that 2020 program to update the Citronen development plan, Ironbark engaged Mining Plus to undertake the mine plan optimisation using current technologies and costs, and, to report a maiden JORC Ore Reserve for the project.

This work consisted of five key areas:

1. Review and update the cut-off grade assumptions and sensitivity
2. Mine design including sequencing, scheduling and ventilation modelling
3. Mining fleet selection
4. Update the capex and opex estimates and mining cost model
5. Reporting a maiden JORC 2012 compliant Ore Reserve

Assisted by teams in Melbourne and Canada, where Mining Plus has personnel with significant Arctic mining experience, the study ran from February to August 2020. The timeline for completion was unavoidably extended due to the outbreak of the Covid-19 pandemic and its impact on personnel and work practices.

Results

The newly optimised Citronen Mine Plan considerably de-risks the mining operation in a number of key areas, as well as significantly improving both the project economics and overall understanding of how the ore body is optimally mined (with respect to future optionality in the event of a rising Zn price).

Consistent with the Board's intention to further de-risk the project development, several key pricing and production assumptions were adjusted to reflect a more conservative approach. Development rates were altered to reflect a more considered production ramp up, twin access declines have now been adopted in the mine plan (with substantial opex, efficiency and safety benefits), and the planning behind the proposed Cut & Fill mining method was resolved in greater detail than in previous studies.

The goal of optimising high-grade pillar recovery by using frozen backfill was also explored in depth and continues to form part of the mine plan.

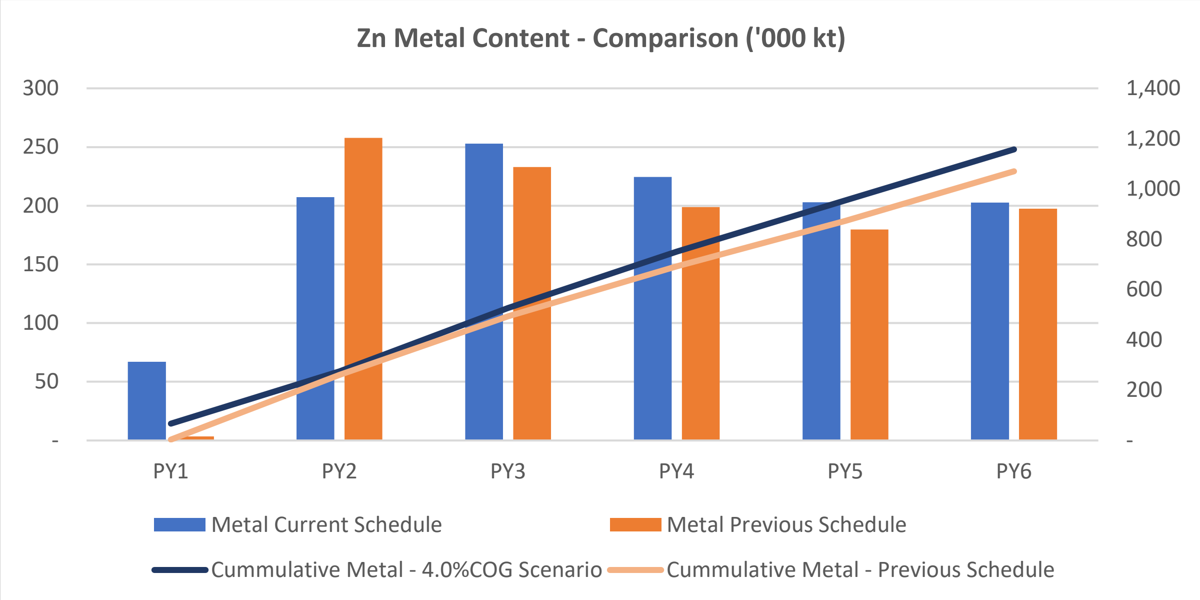
Production

The study reaffirmed that the ore body supports a 3.3Mtpa throughput rate, mined from a combined Underground and Open Pit operation. To further decrease risk and to embrace the highest possible standards of safety, underground access to the main orebodies is now proposed to be via twin declines. While increasing initial development costs, this approach has substantially improved subsequent mining productivity and considerably enhanced safety standards. The Cut and Fill mining method was optimised to follow the contours of the orebody mineralisation more closely to increase metal recovery and reduce mining dilution.

These changes have materially improved metal recovery in the first 6 years of run rate production, with an additional 90,000 tonnes of Zn metal being extracted over that time.

Please see Fig 1 below for details of this on an annual basis:

Figure 1 – Additional Metal Production Yr 1 to 6



Additionally, the merits of a smaller 1Mtpa operation were also explored in the Study but the trade-off between fixed costs to establish the site vs. overall metal recovery (and lower operating costs once built) determined that the larger run rate was more appropriate for the Project.

Cut-Off Grade Assumptions

Both higher and lower Cut Off Grade (COG) (5.3% Zn and 4.0% Zn respectively) cases were examined in detail in the study, in conjunction with multiple alternative mining scenarios. The same Zn price of USD 1.20/lb was applied to both the higher grade and lower grade scenarios.

The 4.0% COG chosen in the final design was selected because it delivered 30% more revenue into the underground mine and reduced underground capital and total costs per tonne by 29% and 10% respectively. The Discovery Open Pit also comes into the schedule at the lower COG, after underground mining is complete.

A summary of the physical results of both options is presented below:

5.3% COG SCENARIO	
Revenue	**Value**
Ore tonnes	18.3M
Recovered Zn (t)	1.0M
Zn price US$/t	2,645
Recovered Pb (t)	49,758
Pb price US$/t	2,094

4.0% COG + OP SCENARIO	
Revenue	**Value**
Ore tonnes	37.7M
Recovered Zn (t)	1.6M
Zn price US$/t	2,645
Recovered Pb (t)	96,795
Pb price US$/t	2,094

Mining costs, both Capital and Operating, were rebuilt from first principles as part of the study, with contractor rates applied throughout (potentially lowering the eventual upfront capital expenditure hurdle).

It is anticipated that this analysis will now be extended to determine an owner operator cost model, which the Ironbark Board expects would realise an estimated 5-10% reduction in mining operating costs.

Sensitivity Analysis

The Citronen deposit has been proven to be highly sensitive to a rising Zinc price, and, given the very large in situ Mineral Resource, the operation is favourably positioned to accommodate an extended mine life if the price rises above the currently adopted USD1.20/lb.

The key sensitivity outputs in terms of additional tonnes include:

			+10%	+20%	+25%
	Price	**1.20**	**1.32**	**1.44**	**1.50**
5.3% Zn COG	**M Tonnes**	18.3	21.8	26.0	28.5
4.0% Zn COG	**M Tonnes**	37.7	43.2	49.7	53.6

Citronen Project and the Zinc Market

The Zn price is currently in a strong post-Covid recovery phase with a combination of supply disruptions and forecast stimulus induced growth promising to drive base metal sentiment higher:

Zinc Price – Last 12 Months (http://www.kitcometals.com/charts/zinc_historical_large.html#1year)

With its long mine life and scale driven cost advantage over its near-term Zn developer peers, the Ironbark Board anticipates that Citronen will be well positioned to ride out the swings of the Zn price cycle, capturing multiple “booms” over the longer term.

Further Details

This notice is authorised to be issued by the Board.

Please contact Managing Director Mr. Michael Jardine for any further inquiries on either mjardine@ironbark.gl or +61 424 615 047.

Competent Persons Statement

The information included in this report that relates to Exploration Results & Mineral Resources is based on information compiled by Ms Elizabeth Laursen (B. ESc Hons (Geol), GradDip App. Fin., MSEG, MAIG), an employee of Ironbark Zinc Limited. Ms Laursen has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Ms Laursen consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

Competent Persons Disclosure

Ms Laursen is an employee of Ironbark Zinc Limited and currently holds securities in the company.

The current JORC 2012 compliant resource as released on 25th November 2014 for Citronen:

70.8 million tonnes at 5.7% Zn + Pb

Category	Mt	Zn%	Pb%	Zn+Pb%
Measured	25.0	5.0	0.5	5.5
Indicated	26.5	5.5	0.5	6.0
Inferred	19.3	4.9	0.4	5.3

Using Ordinary Kriging interpolation and reported at a 3.5% Zn cut-off

Including a higher grade resource of:

29.9 million tonnes at 7.1% Zn + Pb

Category	Mt	Zn%	Pb%	Zn+Pb%
Measured	8.9	6.6	0.6	7.2
Indicated	13.7	6.8	0.5	7.3
Inferred	7.3	6.2	0.5	6.6

Using Ordinary Kriging interpolation and reported at a 5.0% Zn cut-off

JORC Table 1 included in an announcement to the ASX released on 25 November 2014: “Citronen Project Resource Update”. Ironbark confirms that it is not aware of any new information or data that materially affects the information included in this announcement and that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

Cautionary Statements

Please note that Production Targets within this announcement are based on a proportion of inferred resources. There is low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised. The estimated mineral resources underpinning the production targets were released to the ASX on 25th November 2014.

The ASX release dated 12 September 2017, "Citronen Feasibility Study Update", contains full details of the material underlying assumptions underpinning the Citronen Feasibility Study. The Company confirms that all material assumptions underpinning production targets or forecast financial information derived from a production target continue to apply and have not materially changed.